The Cities' Stake in World Problems

"If the Cities Fail in Their Duties, Democracy Fails"

THE AMERICAN CITY hopes that readers have not missed the article under the title quoted, by Clyde Eagleton, Professor of International Law at New York University, in the December issue; and the October article on "A Wartime Opportunity for the American People," by Mrs. J. Bordon Harriman, former United States Ambassador to Norway.

Both articles stressed the interdependence of local, national, and international governments, and ways in which local officials and civic leaders who are cooperating so effectively toward the winning of the war, may also help win the peace.

An admirable pamphlet for use in the public schools and by citizens' organizations, from which the charts on this page have been reproduced, has been published (at 15 cents) by the Commission to Study the Organization of Peace. This pamphlet is entitled "Towards Greater Freedom—Problems of War and Peace." It is based on a manuscript prepared by a Workshop on Post-War Problems composed of a group of New York City high school teachers of the social sciences. The project was carried through under the general supervision of Professor Erling Hunt of Teachers College, a member of the Commission to Study the Organization of Peace, with the editorial assistance of Mrs. Harrison Thomas, a member of the Commission's Education Committee. The illustrations were designed by Graphic Associates.

The 80-page pamphlet is divided into seven sections: I, Why Study Post-War Problems Now?; II, The World We Live In; III, The World We Want; IV, World Order vs. Nationalism; V, Problems Facing the World Order; VI, Plans for World Organization; VII, What Part Shall Our Country Play? There is also an appendix with the text of the Atlantic Charter and the Declaration by the United Nations; a section on Aids to Study; and a Bibliography and Glossary.

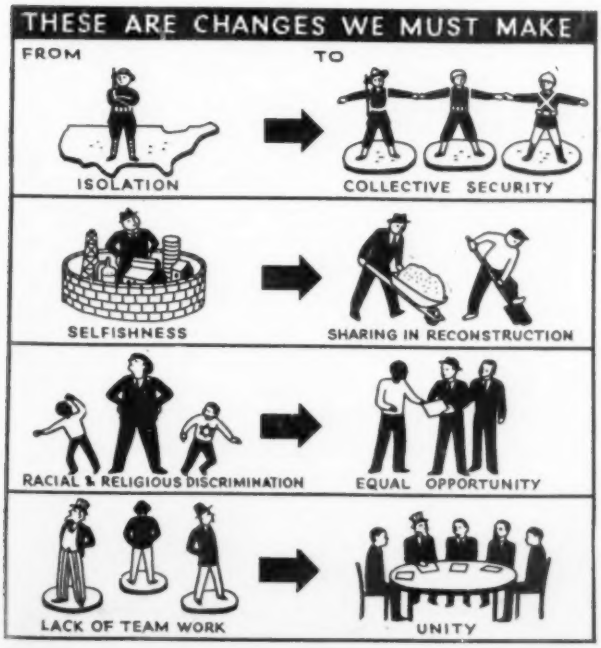
"Towards Greater Freedom" says, in its final paragraph:

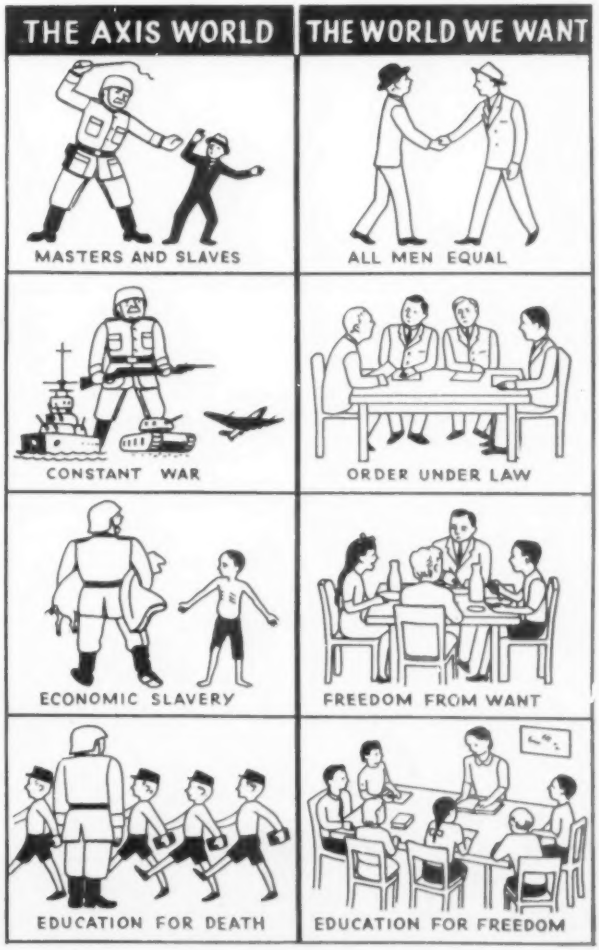
"When the history of this period is written a century from now, the present war may be viewed as but an incident in man's struggle toward greater freedom and security. . . . Let it not be said that the United States faltered. As a democratic power with a rich heritage of personal liberty and opportunity, we must assume our share of the burden in lifting the common man everywhere to a place of dignity."

The Commission to Study the Organization of Peace (8 West 40th Street, New York) will welcome inquiries from municipal and school officials and others concerned with problems of wartime preparedness for peace.

For all these reasons then, (1) because planning for peace is a long hard job, (2) because we and our fighting forces need to know just what we are fighting for, and (3) because a clear picture of our aims can be a powerful part of our war strategy, we must at once set about planning for the post-war world.

—From the pamphlet, "Towards Greater Freedom"





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Hundreds of thousands of Garands have been made in an amazingly short period of time. But for the raw material producers and the factories—and for the men who built them, there had to be an abundance of water. To the Layne Organization fell the task of producing an amazingly high percentage of that water. The quality and dependability of Layne Wells and Pumps had long been proven on the field of action.

Layne Wells and Pumps are backed by more than sixty years of outstanding success in all parts of the world—and even under the most adverse conditions, they constantly maintained their enviable record of highest efficiency and long life. Layne's activity is now nearly 100 percent for the war effort, but when peace returns, installations for municipal and private industries will be resumed. In the meantime, every effort is being made to supply parts and repair service to all existing installations.

For late bulletins, catalogs and further information, address

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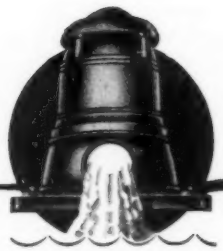

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WORLD'S LARGEST WATER DEVELOPERS

REPAIRS and maintenance of municipal and private industrial Water System should not be neglected. The Layne Organization is endeavoring to service existing installations with necessary repairs and parts. If your wells and pumps need attention, you are urged to write, giving full details of your requirements. No obligation.

Our Municipal Notebook

Cheap Power: Enemy of Local Stagnation

TO the numerous reasons why municipally made electricity is an advantage to a city, there is now added the need to provide against a local industrial slump after the war. The availability of an adequate supply of low-cost power will help industrial plants whose war contracts are finished to turn easily to peacetime production in any of the 2,000 communities owning electric systems.

In the November National Municipal Review, Dr. John Bauer compares rates in various industrial cities and asserts that low rates will be essential in preventing industrial stagnation. On page 50 of this issue of THE AMERICAN CITY, there is an article presenting the wartime as well as peacetime values of municipally generated and distributed electric power.

Buildings That Take Bombs and Stop Fires

THE survival of Malta, most bombed island on the face of the earth, is ascribed by S. H. Ingberg, fire resistance expert of the National Bureau of Standards, to the fact that buildings there have masonry interior as well as exterior walls, which prevent the spread of fire. While buildings in Malta have collapsed under persistent bombing during the three years that the Germans and Italians have sought to destroy this strong British base, no fires of consequence have been started on the island.

Other incidents in recent warfare indicate the superiority of incombustible fire-resistant construction in preventing excessive fire damage. Madrid, besieged by an attacking force in its outskirts for more than a year, suffered comparatively little from fire, while important parts of Warsaw with masonry-walled buildings *having interior wood framing* were destroyed by incendiaries dropped from airplanes.

Type of building construction is an important factor in preventing the communication of fire from building to building. The Baltimore conflagration of 1904 swept through 50 city blocks of three- to five-story buildings of this type, until stopped on one side by modern fire-resistive buildings which, while damaged or partly burned out, did not communicate fire to the structures beyond them.

The Transit of Transit

33 Years Ago

On August 12, 1910, Delos F. Wilcox, consulting franchise and public utility expert, felt that the credit condition of the street railways was so hopeless as to make purchase by cities the only solution.

25 Years Ago

A prominent street-railway man said: "A commission of public-spirited citizens representing the real estate and commercial interests could, in cooperation with the city and the company together, best plan for added transit."

24 Years Ago

On May 28, 1919, T. E. Mitten, President, Philadelphia Rapid Transit Co., said, "We must improve our salesmanship so as to sell more of what we have to sell—street-car rides."

23 Years Ago

In 1920 the Federal Electric Railways Commission reported to the President: "It is clear from this record that the most serious need in the electric railway situation today is the need of cooperation between the public and the utility."

11 Years Ago

In August, 1932, a Special Committee on City Passenger Transportation of the U. S. Chamber of Commerce reported as follows:

"Due to declining earnings, political bickerings, inability to enlist public interest and cooperation in the solutions of their problems, these companies have been unable to rehabilitate their facilities. Car equipment replacements lie far behind any reasonable program. Track extensions and readjustments of track locations to meet growth and changing conditions are blocked by lack of public cooperation. In consequence, the service of electric railways in most cities is in an unstable condition and in many instances the companies face a financial situation that is becoming increasingly acute."

7 Years Ago

The 1936 address of President Edward Dana of the American Transit Association was on the need for cooperation by the municipal officials and the riding public.

6 Years Ago

Charles W. Chase, then president of the American Transit Association, said for the transit industry:

"I think our number one job today is to promote better understanding of transit among our riders, our employees, and the general public.

"Somehow, and in some way, we must solve this problem on the basis of mutual consideration of the rights and interests of the public, the employees, and the owners of the properties."

5 Years Ago

On March 25, 1938, Charles Gordon, Managing Director of the American Transit Association, went to Detroit to address the Engineering Society of Detroit. He said:

"I approach my subject as a civic problem—the most important, most controversial, and at the same time the least understood problem of the modern city—that of improving its transportation system.

"Every city recognizes the presence of the problem of congestion and seeks to do something about it. But there is a general lack of factual knowledge and long-range planning.

"There is a strong tendency to assume that we shall all ultimately move about in private automobiles.

"Thus in many directions the transit industry is seeking to meet the demand for improved urban transportation. But it can achieve its objective only if the importance of this type of service in modern cities becomes fully recognized."

Now

THE AMERICAN CITY says that the transit industry, far from suffering from the cold from being on the outside looking in at the heart and spirit of the public, may have become uncomfortably warm from now being so deeply on the inside looking out.

The transit industry does not have to look out for anything in the sense of being overcautious. If it carries the war load with the cheerfulness and imagination necessary to attain full efficiency without new equipment, it will have established its right to a voice in deciding whether or not the public shall continue to be the customer, a partner, or even the proprietor.

One thing is certain, city transportation is so much part and parcel of a city's 24-hour buzzing, that the transit company will never get very far away from City Hall. Most civic leaders have learned to differentiate the transit company of today from the buccaneer who may have started it.

There is place in America for the independent transit company whose executives know that to pay expenses, build reputation and make profits require a service eternally geared to the public's interest. There is no place for a bank-controlled public transit system in which the transit men are mere puppets.

Combining Utility and Beauty
FOR TODAY AND TOMORROW

BY building an elevated Hortonspheroid, Jonesboro, Arkansas, "killed two birds with one stone." This type of water storage combines the streamlined beauty of the Hortonspheroid (a familiar sight throughout the oil country where it is used for the storage of volatile liquids) with the proven advantages of elevated storage.

The Jonesboro tank has a capacity of 1,000,000 gals. and is 70 ft. to bottom. After its installation power consumption per 1,000 gals. of water delivered into the system showed a marked drop . . . the electric plant was able to drop about 300 hp. of well and pump motors from on-peak periods . . . and pressure charts showed that distribution pressures were held practically constant, where formerly they fluctuated between 35 and 60 lbs.

Large, impressive tanks, such as this often serve both residential and industrial needs for years . . . symbolizing the farsightedness of the engineers and municipal officials who planned them.

Tank maintenance is more important today than ever, as war activity increases the demands on water systems. Proper care of elevated tanks will help guard a municipality's water supply.

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Mention THE AMERICAN CITY—it helps.

Wartime Water-Works Operation

Georgia's Water Works Plan Air Raid Defense

THIS is the way Georgia's water-works civilian defense units will go into action under a bombing attack. The procedure appeared in the official bulletin of the Georgia Water and Sewage Assn.

A yellow warning signal is received by the local Control Center from the District Warning Center.
The water superintendent is alerted and calls all key men to the station.
The air raid siren sounds and other water department employees go to predetermined points.
The air raid occurs.
The Control Center is advised of the damage by air raid wardens.
The Control Center notifies water department headquarters.
Water department headquarters orders a crew to shut off the damaged main.
The shut-off crew cuts off the water main.
The shut-off crew notifies department headquarters, by telephone or otherwise, that work of shutting off has been completed.
Water department headquarters notifies the Control Center and, through it, the fire department is notified that the main is out of service.
The superintendent or foreman inspects the site of the bombing.
Plans are made and crews organized to perform the necessary repair work.
If repair work appears to be beyond the capability of local departments, the Zone Coordinator is called on for aid.
Repair work is started at daylight unless the main damaged is one that cannot be kept out of service or unless the blackout is over before morning.

All crews meet once a month for two-hour drill under a simulated emergency. The drills include water incidents and simulated shut-off of water in certain sections.

Controlling Subversive Activities

THE Water Department at Charleston, S. C., has been practising definite protective measures for more than two years, guarding against the possibility of subversive activities and sabotage. Precautionary measures have been taken to restrict the unlimited visiting of certain vital points in the water-supply system. Barriers have been erected at all roads leading to the pumping station grounds with gates at principal entrances. Cottages for the watchmen have been installed, and continuous guards have been placed at these points. Watchmen are on 8-hour shifts with continuous service throughout the month. They stop all persons entering pumping station grounds and refuse admission unless passes are presented, taking the names of visitors irrespective of whether they possess passes or not, to note their purpose in visiting the plant and record the license number of the automobiles.

In addition to these measures, the engineers at the pumping station and the custodian at the river intake were deputized by the Governor as state constables without pay, receiving their commissions on June 28, 1940.

Equipment Adjustments for Handling New Alum

DIFFICULTIES that water-works operators may be experiencing with the new Victory alum, low in aluminum oxide content, can be overcome by adjustments and minor changes of the chemical feeding equipment. This was pointed out by Fred E. Stuart, Pres., Stuart-Brumley Corp., Baltimore, Md., in a paper delivered before the Virginia section of the American Water Works Assn., Nov. 5 and 6 at Richmond.

The present alum that is available has a tendency to be lumpy and caked at times. It does not completely dissolve as readily as alum that was available previously and it is more dusty. The reason for this is that the high quality bauxite formerly used in its manufacture is now being allocated exclusively at aluminum extraction plants for manufacture into aircraft. South American deposits of bauxite cannot reach the country so readily because of shipping shortages. Consequently domestic bauxite supplies have to be utilized. For both chemical use and aluminum manufacture, WPB has requested, and rightly so, states Mr. Stuart, that the highest quality bauxite be allocated to the aircraft industry.

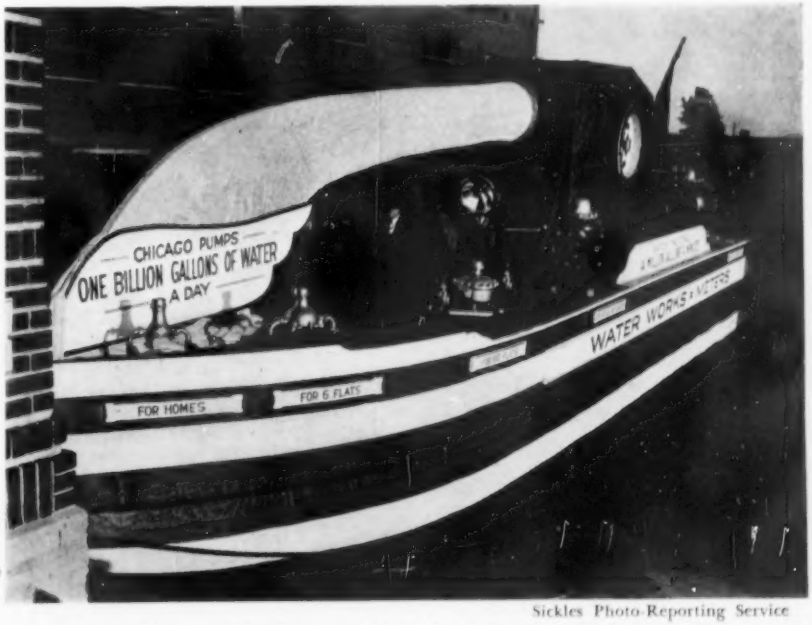
Mr. Stuart feels that manufacturers will be able to overcome the lumping and caking characteristics of the present product.

To aid in handling the chemical, Mr. Stuart recommended the use of a water eductor or ejector in the alum feed line. This will clear the line of sediment and generally facilitate chemical feeding. He recommended that the ejector be run for five minutes after the dry feed machine has been turned off. This, he pointed out, is particularly helpful where intermittent operation is practised.

The use of water jets also was recommended as a method of hastening the dissolving of the chemicals. He advised using a ¾-in. water supply pipe placed in the bottom of the dissolving chamber. This should then be reduced to ⅜-in. and capped. This cap should have three ¼-in. holes drilled in it to produce a jetting action that will be of real assistance in putting the chemical in solution.

Because the alum is less soluble, approximately 10 to 15 per cent of the chemical is required for the same clarification.

Because the alum is less soluble, and contains only 14 per cent instead of 17 per cent aluminum oxide, approximately 10 to 15 per cent more of the chemical is required.



Sickles Photo-Reporting Service

Last Summer during a Flag-Day parade in Chicago the water-works department turned out with this colorful float. Constructed by Frank Anderson of the meter shops, it contained some 10 Trident meters varying in size from ⅝ inch to 12 inches. Legends described their application.

Brooks LOAD LUGGER

TRADE MARK REGISTERED

"goes to town" NEW BUCKET DESIGN FOR MUNICIPALITIES

Above: Refuse Container in carrying position.

At Right: Refuse Container in dumping position.

BROOKS presents the well-known LOAD LUGGER with a special Refuse Container for handling garbage, waste, sewage, slop or similar materials, wet or dry.

This equipment is useful around naval stations, army camps, aviation training fields, hospital centers and barracks at departure points. It is available to cities quartering the armed forces or any localities with necessary priority ratings.

Several Refuse Containers are used with each truck-mounted LOAD LUGGER. They are spotted at handy loading points, then picked up and hauled away for dumping.

The Container has a high discharge height and the entire bottom opens, preventing any possibility of clogging. The bottom section is water-tight, which permits carrying liquids without leakage.

BROOKS
LOAD LUGGER
with standard tilt-type bucket for handling dirt, crushed rock, sand, gravel, cement and other materials.
Ask for Catalog #44.

Brooks EQUIPMENT AND MFG. CO.

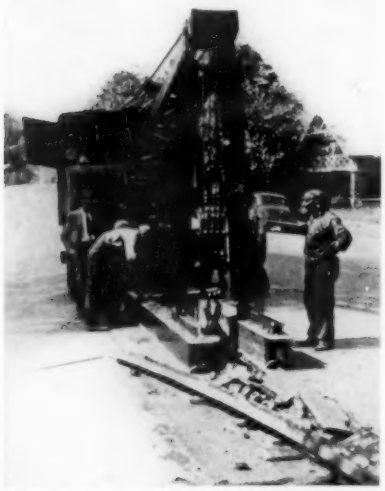
Distributors in all Principal Cities

109 Davenport Road

KNOXVILLE, TENNESSEE

Buy War Bonds and Stamps. Help win the war for FREEDOM.

Street Construction and Maintenance



The work of street-car rail removal, has been expedited in Birmingham by the use of this new pulling device. With this equipment the rails may be removed with a minimum of disturbance to the pavement.

A New Rail-Puller

IN salvaging some 4,060 tons of street-car rails from the streets of Birmingham, Ala., a new type of equipment was used that yanked out the rails with little damage to the paving.

This work in Birmingham, as in other cities, was financed by the Metals Reserve Corp., an RFC subsidiary, under an agreement with the city to repave the streets. Under the direction of City Engineer, J. D. Webb, the contract was awarded to Coosa Construction Co., of Gadsden, Ala., which in turn sub-contracted with the Victory Rail Remover Corp., of Philadelphia, to pull the rails.

Motive power for the operation was furnished by a Browning crane to whose boom was attached a special type rail puller. Two I-beams are placed parallel with the rail to be pulled and about 9 inches therefrom on each side. An A-frame attached to the end of the boom holds the I-beams securely and the latter shears off the pavement as the block and tackle, with grab, drag the rail out of the street. Thus a minimum amount of pavement is torn up, this being replaced immediately with asphalt.

The rail as salvaged was immediately shipped to mills needing it worse for war purposes. The first shipment of 500 tons went to mills in the Birmingham area.

GEO. H. WATSON,
Birmingham, Ala.

Preventing Frost Damage in City Streets

THE use of rock salt as a method of controlling frost damage in streets and highways has been receiving favorable reaction from both the laboratory and the practicing engineer. In a report issued by the Purdue Engineering Experiment Station, 3 per cent of salt will eliminate frost heaving in certain soils natural in Indiana at temperatures as low as 15° F. The report further points out that this temperature rarely occurs under roads and then only for a few hours.

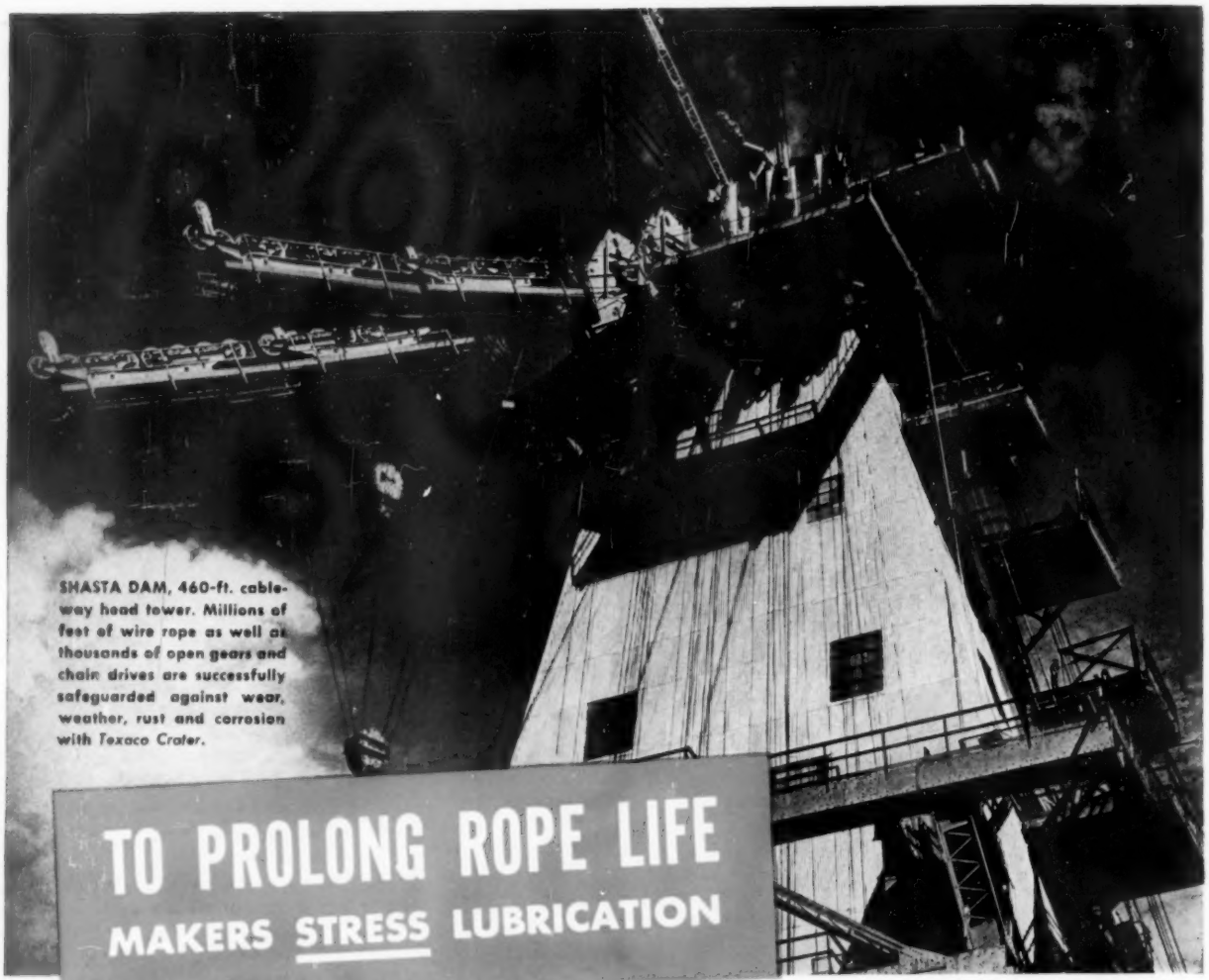
The use of salt has been receiving severe tests in road construction in the Province of Nova Scotia. Severe frost of winter, varying soils, and marshy areas all make road construction in this area difficult. In this Province 30 tons of salt were laid under each mile of road irrespective of the nature of the subgrade. R. W. McColough, Deputy Minister of Highways, reports that the salt was used to prevent frost heaving. However, it has been noticed that it often produced a stabilizing action between the clay and gravel.

In using Sterling CC grade rock salt, the International Salt Co., Inc., Scranton, Pa., recommends five pounds of salt per square yard of subgrade area, the salt being spread over the grade and worked into the surface with a scarifier, harrow, or other similar equipment.

The treatment is not recommended to replace good drainage, or fundamental ideas of backfilling with selected materials.

Top: A Haiss snow loader tackles a drift in the down town streets of Pittsfield, Mass.

Modern equipment helps Pittsfield, Mass., cut its street maintenance costs while furnishing a thorough service. This loader removes snow seven times as fast as manual labor and reduces the cost of handling by 75 per cent. The asphalt mixer below prepares cold patch mix for street surfaces at less than half the cost of hand mixing.



SHASTA DAM, 460-ft. cableway head tower. Millions of feet of wire rope as well as thousands of open gears and chain drives are successfully safeguarded against wear, weather, rust and corrosion with *Texaco Crater*.

TO PROLONG ROPE LIFE
MAKERS STRESS LUBRICATION

Photo courtesy U. S. Bureau of Reclamation

WIRE ROPE manufacturers without exception, stress lubrication as the No. 1 war measure to lengthen rope life, save steel, maintain vital construction schedules. Everywhere, wire rope users are following this advice, and prolonging rope life with *Texaco Crater*.

Texaco Crater penetrates to the very core of wire rope, sealing each wire in a tough, viscous film that reduces internal friction and wear, keeps out moisture, prevents corrosion, makes ropes last longer.

The outstanding performance that has made Texaco preferred in the fields listed in the panel has made it preferred on important construction jobs throughout the country.

These Texaco users enjoy many benefits that can also be yours. A Texaco Lubrication Engineer will gladly cooperate . . . just phone the nearest of more than 2300 Texaco distributing points in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York, N. Y.

THEY PREFER TEXACO

* More stationary Diesel horsepower in the U. S. is lubricated with Texaco than with any other brand.

* More Diesel horsepower on streamlined trains in the U. S. is lubricated with Texaco than with all other brands combined.

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* More revenue airline miles in the U. S. are flown with Texaco than with any other brand.

* More buses, more bus lines and more bus-miles are lubricated with Texaco than with any other brand.

CRATER BOOKLET yours for the asking. 32 pages telling and showing what Crater does and how easy it is to use to protect wire rope, gears and chains.

TEXACO

TEXACO Lubricants and Fuels
FOR ALL CONTRACTORS' EQUIPMENT

TUNE IN FRED ALLEN EVERY SUNDAY NIGHT—CBS ★ HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

Do you mention THE AMERICAN CITY? Please do.

Sewerage and Sewage Treatment

Variety in Sewage Gas

IF variety is the spice of life, then sewage gas leads an interesting career in Grand Rapids, Mich. Gas there is available for no less than eight different purposes.

Heats Buildings and Digesters

Two hot water boilers are heated at this plant by sewage gas. One is a Bryant tubular boiler with a Btu input capacity of 2,886,000; the other is a Penco boiler with a Btu input capacity of 3,000,000. These use from 100,000 to 150,000 cu. ft. of gas per day and heat six buildings on the grounds and four digesters with a capacity of approximately 95,000 cu. ft.

During the spring, summer, and fall months, the gas is used in the Louisville rotary dryer that conditions sludge for fertilizer (*see* p. 55, Oct 1942). About 40,000 cu. ft. of gas per day are used in this manner while the plant is in operation.

Long Pipe Lines

About 30,000 cu. ft. per day are used in an American Ideal boiler to heat the Market Avenue pumping station. This is located about one mile from the treatment plant proper and is connected with the plant by a gas main.

To further extend this, the gas is then piped another half mile where about 11,000 cu. ft. are used to heat a series of municipal buildings during the night hours.

On the plant property, the gas is used to fuel a Buda gas engine running continuously and using about 4,500 cu. ft. per day. This engine drives an air compressor which is used to force air through the inlet conduits to the primary tanks.

At the present time the city has an experimental boiler using about 5,000 cu. ft. of gas per day near the sludge bed. With it, the operators hope to heat one of the sludge beds, 100 x 50 feet, in order to dry the sludge more quickly.

The gas also is used in an incinerator in the screen house to burn the screenings. This incinerator uses about 5,000 cu. ft. per day. Any excess gas is burned in a waste burner on top of the digesters.

Gas Characteristics

The gas averages about 212,551 cu. ft. per day from the digestion of approximately 64,000 gallons of raw sludge and 50,000 pounds of garbage solids. The gas runs around 600 Btu and is composed of ⅓ carbon dioxide and ⅔ methane.

R. W. Musgrove is superintendent of the sewage-treatment works.

New Grit Chamber with Channel Regulator

THE new sewage-treatment plant being constructed at Great Neck, N. Y., is utilizing a grit chamber designed according to the principles recently developed by Thomas R. Camp, Associate Professor of Sanitary Engineering at the Massachusettts Institute of Technology. The outstanding feature of this type of installation is adjustable control mechanism.

Professor Camp concluded as the result of investigation and research that grit removal could be facilitated by adjusting the flow to meet certain conditions peculiar to the particular sewage being treated. He observed that this optimum flow varied between 0.5 and 1.2 ft. per second. He also concluded that the velocity could be stabilized by the use of a chamber with a cross section roughly parabolic in shape.

The grit chamber at Great Neck is being constructed with this idea in mind. Actually trapezoidal in cross section, it closely approximates the parabolic shape, thus allowing uniform velocity regardless of the flow. A moveable plate at the effluent end of the tank allows the operator to control the velocity in order to encourage a maximum removal of grit and at the same time to allow the organic material to be discharged.

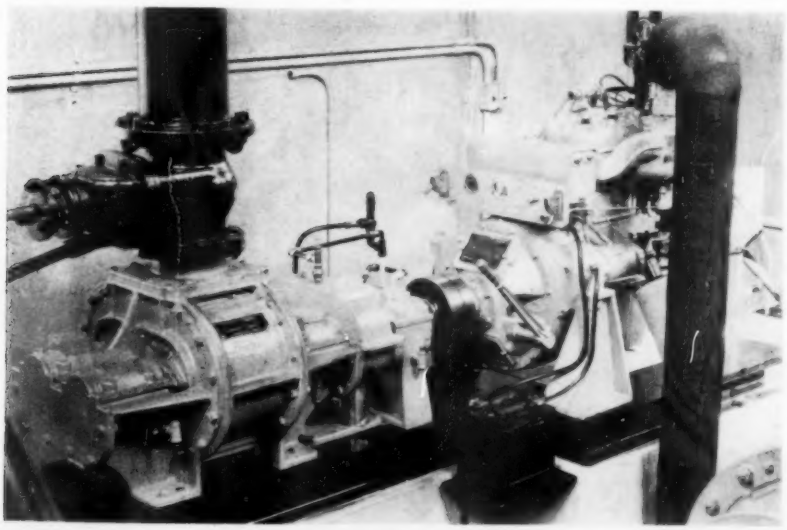
Arrangements have been provided so that a chain conveyor may be installed operating slowly throughout the length of the chamber to convey the grit to the influent end where it may be removed periodically. If it appears advisable a "hydro-wash" can be installed at the influent end to remove organic material that may have been dropped with the grit, and an elevator can be installed that will automatically lift the grit from the chamber. At the present time this is not being considered.

"Esophagus" Pump

A new mechanical-type bar screen also has been incorporated into the grit chamber. This screen has a rake that periodically cleans the bars, lowering the entrapped material to an "esophagus" type pump that pulverizes and returns it to the channel.

The sewage-treatment plant at Great Neck supplies primary treatment and post-chlorination. It will have a capacity of 3 mgd.

The treatment plant is being constructed by Spearin, Preston and Burrows, general contractors, New York. The mechanical equipment in the grit chamber is being supplied by the American Well Works of Aurora, Ill. Carl H. Watson, C. E., Great Neck, N. Y., was the designing engineer.



The operation of a gas engine powering an air compressor is only one of the ways that sewage gas is put to work at Grand Rapids, Mich.

"IF THOSE PLANES WERE HOSTILE WE'D SURE BE GRATEFUL FOR MATHEWS HYDRANTS"

A winter air raid could be a frightful thing. But Mathews Hydrants would give their town several real advantages. Fire would find them ready in the bitterest weather, for a properly set Mathews cannot freeze. Explosion would find them strong, for the Mathews has no breakpoint. But the greatest single advantage would be their speedy repair in case of ruinous destruction. For all operating parts of a Mathews hydrant can be unscrewed and replaced from above ground—with no digging in frozen ground. That's important in these days of labor shortage.

A Mathews-protected area has every protection that fire hydrants can give.

MATHEWS HYDRANTS

400 CHESTNUT STREET, PHILADELPHIA, PA.

ESTABLISHED IN 1803

Made by R.D. WOOD Company

MANUFACTURERS OF SAND SPUN PIPE (CENTRIFUGALLY CAST IN SAND MOLDS) AND R. D. WOOD GATE VALVES

Public Health

Difficulties Encountered in Milk Inspection Work

PUBLIC health work in Edgeworth, Pa., although now on a firm footing, has encountered stubborn resistance in being established, according to H. F. Burkholder, the borough manager.

In an effort to establish the inspection of milk supplies, the Health Department was threatened by the dairies supplying milk to Edgeworth that they would serve no daily supplies to this city. Consequently, reforms in milk inspection were slow in being established. "According to accurate tests, a bacteriological count of 5,000,000 per c.c. was not uncommon in the early days of inspection," states H. F. Burkholder. "However, we very seldom get a count of over 50,000 per c.c. and we have often recorded samples with a count as low as 600."

Test work is done for the city by the Pittsburgh Testing Laboratory. Examinations of the seven dairies supplying this community are conducted on an average of about twice weekly.

Minimum Temperature For Health Maintenance

THE safe minimum temperature of 65° in the average private home and apartment coincides with the majority opinion of leading medical and public health authorities in the United States according to Leverett D. Bristol, M.D., Montclair, N. J., in a report submitted to the Advisory Committee, Fuel Rationing Division of the Office of Price Administration, and published in the October bulletin issued by the New Jersey Department of Health.

According to Dr. Bristol, the safe minimum temperature depends not only on heat but ventilation and humidity as well. Opinions on both these factors have undergone changes during the past few years.

Humidity Unimportant

In regard to humidity, he quotes recent investigations indicating that the usual variations of humidity in homes during the heating season may be relatively unimportant. At temperautres of 65° or less, artificial humidification generally is not necessary because laundering and living activities will result in adequate humidities for normal people. Artificial humidification, he states, need be undertaken only upon the advice of a doctor.

Formerly, public health authorities considered that ventilation was chiefly a problem involving poisonous gases, too little oxygen, or too much carbon dioxide. Now Dr. Bristol states we have returned to the ideas of the ancients that the problem is chiefly physical and has to do with the air movement, temperature, and moisture content. Ventilation, he states, is not so much a matter of what we breath through our lungs as it is how our skin and body react.

The summary of opinions expressed by medical and public health authorities on the minimum temperatures to be maintained for emergency requirements of fuel oil rationing are as follows:

For the average private home—60-68° (majority opinion 65°)
For the average apartment house—60-68° (majority opinion 65°)
For hospitals and sanatoria—68-80° (majority opinion 70° except operating rooms 80°)
For schools — 60-70° (majority opinion 65°)
For department stores, office buildings, etc. —60-68° (majority opinion 65°)

In homes where the children are under four years of age a room temperature of not less than 70° F. should be provided. Also adjustments should be made in those cases where older people of lowered vitality reside or those homes containing cases of acute sickness or invalidism.

Mental Hygiene Clinic in Kenosha, Wis.

KENOSHA, WIS., residents may take advantage of a mental hygiene clinic free of charge, according to reports by the American Public Welfare Association.

Operated one day a week by the City Council and the Board of Education, the service will cost $1,000—this cost to be shared by the Council and the school board, with the latter being given jurisdiction over the administration of the clinic.

Emergency Sanitation

When Water Supply Fails

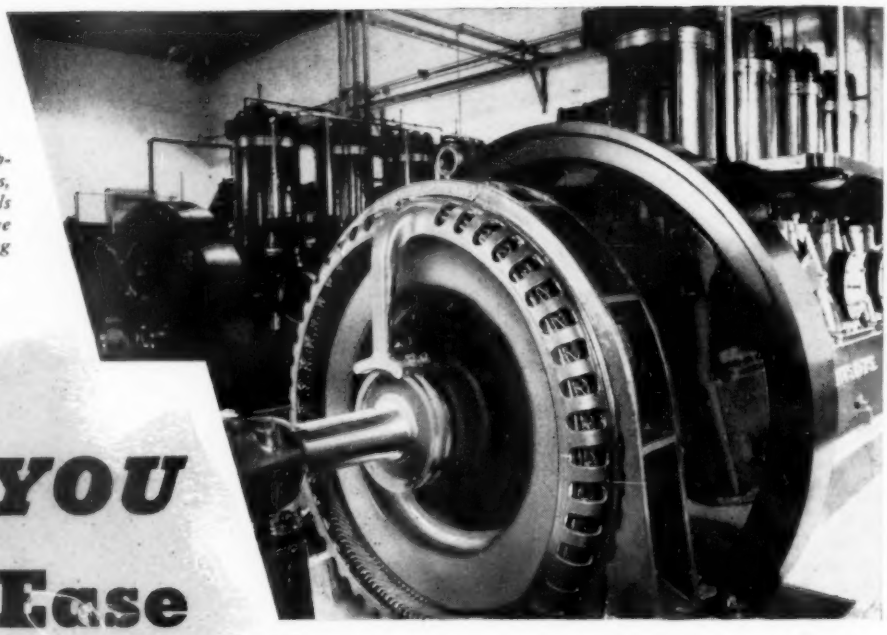
THE sanitary bag reported previously in these pages (*see* page 13, June 1942) is now definitely available for distribution. Developed by W. A. Xanten, Supervisor, City Refuse Division, Washington, D. C., and the Ruby Products Co., Milwaukee, Wis., it presents a practical method of handling sanitary problems when disrupted water and sewer lines put flush toilets out of service. Modern bombing attacks disrupt these mains for greater lengths of time as military proficiency progresses and aerial attacks are intensified.

Showing how the sanitary bag may be used in case water and sewage services fail.

Since the English practice of using galvanized iron pails is ruled out by priority restrictions, officials turned to the use of a paper bag as an alternative. The bag developed is waterproof, has an absorbent lining, and can be folded up and disposed of with a minimum of inconvenience either by incineration, burial, or placing in containers for collection by special forces. The bags obviously eliminate many unsurmountable problems that would present themselves in moderate-sized and large cities.

The bag has the approval of OCD and is recommended for possible use in this organization's bulletin on wartime sanitation.

Although the bag is designed to meet modern wartime emergency conditions, it also can be used during any disaster such as a flood, earthquake, tornado, or a similar disaster when water supply or sewerage is suspended.



Fairbanks-Morse Diesel equipment in the Halletsville, Texas, power plant. Three F-M Diesels are the prime movers which have replaced steam at a big saving to the citizens.

How YOU Can Ease the TAX BURDEN

HALLETSVILLE, TEXAS, has been generating its own power for years with Fairbanks-Morse Diesels. In the ten-year period following 1930, the average rate per kilowatt hour was reduced nearly 66⅔ per cent! Furthermore, the municipal power plant makes a cash contribution to the town treasury of $10,000.00 *each year* in addition to supplying free current to the water department, public buildings, street lights, holiday lighting displays, fairs, and the city recreation center.

The Halletsville municipal power plant is typical of hundreds of other municipal plants throughout the country where Fairbanks-Morse Diesels are reducing city taxes, and providing the money for many civic improvements.

Fairbanks, Morse & Co. is thoroughly organized to serve municipalities. F-M branches are located throughout the country so that no community is far from one or more of them. Each branch has its staff of resident engineers who know local conditions and problems, and who are in a position to co-operate with city engineers in solving legal, financial, and engineering problems.

With high taxes for the post-war period in sight, city administrations will need to save as much as possible for their citizens. A Fairbanks-Morse Diesel power plant may be the answer to that problem for your town. Why not investigate now? Write Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago, Illinois.

FAIRBANKS-MORSE

DIESEL ENGINES
PUMPS
ELECTRICAL MACHINERY
SCALES
MOTORS
WATER SYSTEMS
FARM EQUIPMENT
STOKERS
AIR CONDITIONERS
RAILROAD EQUIPMENT

F M

Diesels

Public Safety

Refueling Trucks Keep 'Em Pumping and Digging

SHOWN below is the newest of the New York fire department's three refueling trucks. This one holds 1,250 gallons of gasoline. The others are of 1,000-gallon capacity. The tank has baffle plates dividing it into four compartments to keep the gasoline from sloshing around.

Two of the tank trucks are stationed in Manhattan and the other one in Brooklyn. They are always filled and respond to three-alarm fires. Filling is done through the top, but the Mack has a safety device which prevents explosion from sparks, static, or other causes when filling the tank. It also has a Heil universal valve with a handle pointed to various compartments, so that gasoline can be unloaded into the pumping engines one compartment at a time. Other Mack trucks operated by the fire department include 58 pumping engines as follows: 7 of 700-gallon capacity bought in 1930; 20-1,000's purchased in 1936, 19 in 1937, and 12 in 1941.

The Sanitation Department of New York City also owns three refueling trucks, of which one is a Mack, serving fuel oil to the city's draglines and tractors employed in land-fill operations. One of the tank trucks was loaned to the Borough President of Queens to serve street and road equipment; in winter the Sanitation Department requires this vehicle for refueling snow-removal equipment.

Making Certain Pumpers Will Have Water

WATER, and plenty of it, is still the best method for putting out fires or incendiary bombs, despite the development of chemical agents, according to Fire Chief Paul F. Heinz of the New Haven Fire Department. Civilian defense experts, both in England and the United States, who for several years have been developing chemicals to combat incendiaries, now concede that water is the most effective of all extinguishers.

Engineers of the fire department and of the New Haven water company are now winterizing the more than 3,000 hydrants which are the only source of water for fire fighting in the New Haven area. To maintain adequate water pressure during cold weather, engineers of the fire department and the water company have drained and closed all the hydrants to prevent freezing.

Water cannot be allowed to stand in hydrants above the main valve which is five feet below ground. Subsurface valves on each hydrant are closed, automatically opening drip valves in the barrel of the hydrant and allowing the water to drain out.

Ground water may work into the barrel far below the surface if hydrants are set in wet ground, creating conditions which might easily cripple New Haven's fire-fighting forces. In wet ground the drip valves must be closed with a plug and the hydrant pumped dry each time it is used.

The fire department maintains two experts to inspect the hydrants periodically, making certain that the joints are properly packed and lubricated. If the hydrants are frozen, the department uses a steam device to thaw them.

A total of 3,073 hydrants in New Haven, East Haven, North Haven, Hamden, Chesshire, Milford, Branford, North Branford, Orange, Woodbridge, and West Haven are on the New Haven Water Company system. Of these, 2,457 are owned by the city and surrounding towns, and 616 are the property of the water company.

Humidity Recorder Reduces Fires and Patrol Expense

IN towns and cities having nearby woods and fields or brush, the control of fires in them is one of the fire chief's most trying responsibilities. These fires account for the bulk of his runs in summer, and consequently for the bulk of his wear and tear on valuable equipment.

The Falmouth, Mass., fire department developed a scientific method of foreseeing the likelihood of brush and woods fires. The medium is a Foxboro relative-humidity recorder installed in an open-lattice-type cabinet at headquarters.

On a rainy day, the instrument may record 90 per cent relative humidity or more, and the danger is nil. During the next five days, the humidity registers not lower than 60 per cent during the day and goes to 90 per cent at night. Even though the sun has shone, the danger is still relatively slight because moisture has accumulated each night.

Now, if on successive days the humidity drops to 40 per cent or below, while the temperature sharply rises or remains high with sunshine, and the night humidity fails to go above 70 per cent, the Falmouth firemen know that the brush in the woods is rapidly drying up. The instrument forecasts this condition.

An order requires that whenever the humidity registers 40 per cent or less on the second consecutive day, a fire patrol must go to work. If continued to the fourth consecutive day, and during such hours as the instrument records 30 per cent or less, three men must be ready at a moment's notice to respond with each of four pieces of fire equipment.

A fire usually breaks out on days when the instrument shows these conditions. During the last three years there have been more fires than previously, but both the losses and the acreage burned have been much smaller due to preparedness made possible by the "forecasts" of the humidity recorder. Use of the instrument, moreover, has reduced the expense of the fire patrol to minimum, because it is used only on "fire days." Obviously it also warns of hazards to any type of wooden building.

Mack tank used to refuel New York City pumping engines at 3-alarm fires

Keep Up-to-Date on New Equipment

Please check over the following list of interesting catalogs obtainable free of charge and either write direct to the manufacturers for their literature, or, if you prefer, put a circle around the identifying num... indicate the catalogs you want, mail this coupon to The Americar... New York, and we will see that the catalogs ... obligation on your part.

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New Type Garbage Container

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485. You will be interested in data on Nordberg's dual fuel-burning engine since it shows how engineers take advantage of every economy possible in power production. Bulletin 106, prepared by the Nordberg Mfg. Co., Milwaukee, Wis., gives details on these units. By a simple change of a few minor parts this engine can burn either fuel oil or natural gas.

Street-Lighting Standards

486. In making your plans for post-war rehabilitation for your street-lighting system you will find considerable guidance and help in catalog 71 issued by The Union Metal Mfg. Co., Canton, Ohio, entitled "Standards for Pendant Lighting." Various types of street-lighting standards are illustrated giving information to meet practically every normal requirement.

Emergency Wood Culvert Pipe

487. A new 8-page folder has been prepared by the Armco Drainage Products Assn., Middletown, Ohio, giving structural data on the new and resourcefully made wood drainage pipe that meets drainage problems without using critical materials. Illustrations of strength, details of connection, specifications, and important characteristics are listed.

Operating Street Sweepers

488. The operation and maintenance of street sweepers becomes increasingly important as time goes on. The Austin-Western Road Machinery Company, Aurora, Ill., has compiled valuable data covering the maintenance of these sweepers that will be of material assistance in helping you prolong their life.

Manometers for Filter Plants

489. The new bulletin No. 200, issued by the Simplex Valve & Meter Co., 6789 Upland St., Philadelphia, Pa., describes the Simplex Manometers. It gives data applicable particularly for filter plants where both the loss of head and rate of flow must be measured. It also has information on the compact portable units available for testing in the determination of water waste in the distribution system. Manometers for use in measuring boiler feed water, steam flow, and related uses in power plant work also are described.

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Water Service Pipe Available

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Thawing Culverts and Hydrants

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(Continued on page 22)

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Here is an actual photograph of costly depreciation of bridge timbers that could have been prevented with Cuprinol treatment.

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CUPRINOL

Stops Rot!

Cuprinol, approved by the Armed Forces as a wood preservative, is a liquid, easily applied by brush, spray or dipping. It gives lasting protection to wood against rot and insect borers. You can use Cuprinol economically and profitably to preserve present or new construction and reduce costs of repair.

There is Cuprinol for Wood; for Fabrics; Ropes; and Nets. Write for information.

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Tanks, trucks, jeeps, guns, planes, boats all get new "facials" often—protective colorings that blend with backgrounds, changing with the seasons or locale. Paint sprayers, powered by dependable Briggs & Stratton gasoline motors, do these jobs quickly.

Unusual tasks, like this one, form only a small part of our service to the armed forces — and are in addition to dozens of major uses — but all of them equally important.

e war effort takes the entire oduction of Briggs & Stratton 4-cycle, air-cooled gasoline motors, so they are now available only to those who are serving the war program, or for approved "essential" civilian uses.

We'll do our best to serve you, if your product fits these classifications, or if you are planning post-war production of gasoline-powered appliances and equipment.

To conserve Briggs & Stratton Motors now in use, we urge operators to take extra precaution to see that each motor is correctly lubricated, properly adjusted and kept clean.

In case of emergency see your regular dealer or the nearest Authorized Briggs & Stratton Service Station.

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BUY WAR BONDS

4 CYCLE
BRIGGS & STRATTON
GASOLINE MOTORS

Keep Up-to-Date on New Equipment

Please check over the following list of interesting catalogs obtainable free of charge and either write direct to the manufacturers for their literature, or, if you prefer, put a circle around the identifying numbers below to indicate the catalogs you want, mail this coupon to The American City Magazine, 470 Fourth Ave., New York, and we will see that the catalogs are sent to you without expense or obligation on your part. 1-43

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Cleaning Sewers Quickly and Easily

490. A special descriptive catalog and instruction manual is being distributed by the Flexible Sewer-Rod Equipment Co., 9059 Venice Blvd., Los Angeles, Calif. This booklet explains the modern way to clean sewers, eliminating 90 per cent of the sewer dig-ups that require the use of expensive hard-to-get manpower.

Training Municipal Administrators

491. You may obtain circulars from The International City Managers Assn., 1313 E. 60th St., Chicago, Ill., describing the several practical corresponding courses that will assist in the training of replacements for your municipal staff. The inroads of war demands have caused cities through the country to lose so many administrators that the training of additional help is imperative.

Wartime Street-Lighting and Blackout Aids

492. Many advantages of the Wagner Type Y-H Constant-Current Regulator are outlined in literature furnished by the Wagner Electric Corp., 6400 Plymouth Ave., St. Louis, Mo. These regulators, always useful during peacetime operations, take on added significance now that blackouts and potential bombings bring many new problems to the municipal official. The regulators provide convenient control in entire blackouts and assist materially in repairing circuits that may have been damaged.

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(Continued on page 22)

CUT MAINTENANCE COSTS 75%

Concrete slab maintenance costs can be reduced as much as 75% by the Koehring Mud-Jack Method. The Koehring Mud-Jack raises sunken concrete . . . walks, curb and gutter, driveways, streets, highways, etc., eliminating reconstruction costs. Write for the new Mud-Jack Bulletin illustrating applications and describing the Mud-Jack Method.

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KOEHRING COMPANY
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MUD-JACK METHOD

Rot Ruins Reputations

Here is an actual photograph of costly depreciation of bridge timbers that could have been prevented with Cuprinol treatment.

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Stops Rot!

Cuprinol, approved by the Armed Forces as a wood preservative, is a liquid, easily applied by brush, spray or dipping. It gives lasting protection to wood against rot and insect borers. You can use Cuprinol economically and profitably to preserve present or new construction and reduce costs of repair.

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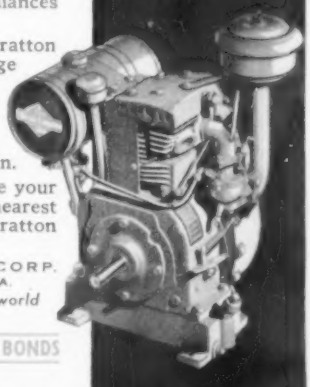
Unusual tasks, like this one, form only a small part of our service to the armed forces — and are in addition to dozens of major uses — but all of them equally important.

The war effort takes the entire production of Briggs & Stratton 4-cycle, air-cooled gasoline motors, so they are now available only to those who are serving the war program, or for approved "essential" civilian uses.

We'll do our best to serve you, if your product fits these classifications, or if you are planning post-war production of gasoline-powered appliances and equipment.

To conserve Briggs & Stratton Motors now in use, we urge operators to take extra precaution to see that each motor is correctly lubricated, properly adjusted and kept clean.

In case of emergency see your regular dealer or the nearest Authorized Briggs & Stratton Service Station.



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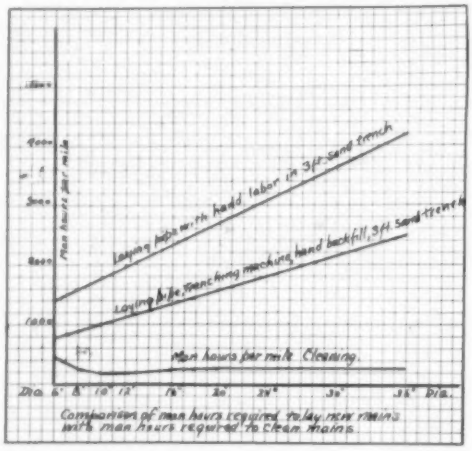
BRIGGS & STRATTON
GASOLINE MOTORS

Save **MANPOWER** and **MATERIALS** by

The NATIONAL METHOD of WATER MAIN CLEANING


Man hours per mile
Laying pipe with hand labor in 3ft. sand trench
Laying pipe, trenching machine, hand backfill, 3ft. sand trench
Man hours per mile Cleaning
Dia. 6" 8" 10" 12" 16" 20" 24" 30" 36" Dia.
Comparison of man hours required to lay new mains with man hours required to clean mains.

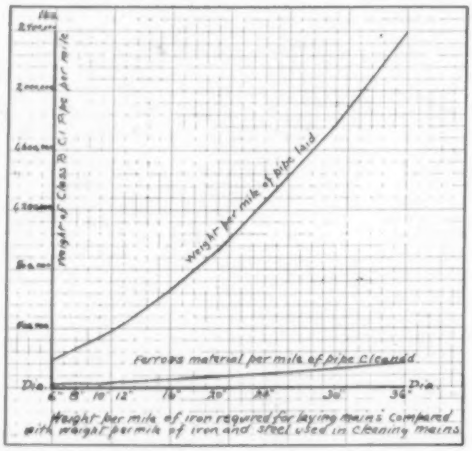

Weight of Class B C.I. Pipe per mile
Weight per mile of pipe laid
Ferrous material per mile of pipe cleaned
Dia. 6" 8" 10" 12" 16" 20" 24" 30" 36" Dia.
Weight per mile of iron required for laying mains is compared with weight per mile of iron and steel used in cleaning mains

DIAGRAM I shows the number of man hours required to clean mains of various sizes compared with the number of man hours required to lay new mains of same diameters.

DIAGRAM II gives the weight per mile of the iron and steel used in cleaning mains of various diameters, contrasted with weight per mile of iron required if new mains of same diameters were laid.

Note the big saving in manpower, and the huge saving in a very essential war material—iron.

Note also that restoration of pipe capacity through cleaning the interior by THE NATIONAL METHOD often makes it unnecessary to purchase additional booster pumps or to maintain higher pump pressures—which—require—more—fuel (if you can get it!)

The National Water Main Cleaning Co.

30 Church St. New York

Branches:

115 Peterboro St., Boston, Mass.
910 William-Oliver Bldg., Atlanta, Ga.
7103 Dale Ave., St. Louis, Mo.
3812 Cuming St., Omaha, Neb.
406 Fla. Theatre Bldg., Jacksonville, Fla.
205 W. Wacker Dr., Chicago, Ill.
501 Howard St., San Francisco, Calif.
2028 Union Ave., Montreal, Can.

WHICH OF THESE CATALOGS WOULD YOU LIKE?

(*Continued from page 18*)

Construction and Maintenance Materials

498. Illustrated literature, distributed by the Thompson Materials Corp., 204 West St., New York, describes material and equipment useful to municipalities in their construction and maintenance programs. This includes concrete curing materials, bituminous materials, expansion joints, and many miscellaneous articles. Thompson spraying machines, the literature states, may be purchased new or rented.

Approved Water Meter Couplings

499. Water-works superintendents will be interested in the literature distributed by the Ford Meter Box Co., Wabash, Ind., describing their Ringstyle Couplings connecting direct to copper tubing or iron pipe, saving pipe joints and fittings. This company will send not only literature but also a sample of the coupling if desired.

Jointing Bell and Spigot Pipe

500. Hydro-Tite, a self-caulking joint compound for cast-iron bell and spigot water mains, and Dry Braided Fibrex, used in place of jute, represent an interesting development in the water-works field. According to literature that the Hydraulic Development Corp., 50 Church St., New York, is distributing, Hydro-Tite is easy to use, requires no caulking, and will stand any pressure the pipe will stand. Dry Braided Fibrex has the distinct advantage over braided jute in that it will not breed bacteria.

Asphalt Plants

501. Municipal officials, and street-department superintendents in particular, will find the new pamphlet "Simplicity Asphalt Plants," prepared by the Simplicity System Co., Chattanooga, Tenn., highly interesting. Details in the construction and erection of these plants are shown clearly. The booklet is well illustrated and devotes one section entirely to the municipal type of plant.

Garbage and Rubbish Incinerators

502. Bulletin No. 212, prepared by the Nichols Engineering & Research Corp., 60 Wall Tower, New York, is devoted to this company's newest incineration development, the Monohearth. Distinctive features of this incinerator are the central cone and two or more tangential stoking arms. Both the cones and arms are provided with air ports for the passage of combustion air under pressure to the fuel bed of the refuse. The cone revolves slowly and encourages the burning of the garbage or refuse. The company claims smaller capital investment, lower annual cost, a high rate of burning, reduction in manual labor.

Maintaining Duplicating Equipment

503. Information on ways to maintain Mimeograph equipment are available through the A. B. Dick Co., Chicago, Ill. This company will help you get more work out of available equipment; help you conserve it with care and regular service.

Installing Asbestos Cement Sewer Pipe

504. The Installation Manual prepared by Johns-Manville, 22 E. 40th St., New York, will give you full and complete data on approved methods of installing Transite pipe for use in sewer construction. The manual is complete in its description. It tells how to handle the pipe when unloading it, desribes the excavation of the trench, bedding of the pipe, laying, and back filling.

Keeping Air Compressors Operating

505. The Gardner-Denver Co., Quincy, Ill., has set up a series of important essentials on the maintenance of air compressors in the performance of essential municipal operations. These units are finding important new uses in assisting in the salvaging of street-car rails to be used in steel production. Write to the Gardner-Denver Co. for your copy of these points on better performance.

Measuring Water Flow

506. A comprehensive little booklet is being distributed by Layne & Bowler, Inc., Memphis, Tenn., giving details on how to accurately measure the water flow in your distribution system. The tables are based on discharge through a pipe orifice. Accurate calibrations have been established as a result of tests by Purdue University, Lafayette, Ind.

Spray Tank for Road Construction

507. To help you solve surfacing problems on streets, airport runways and parking areas, Littleford Bros., Inc., 500 E. Pearl St., Cincinnati, Ohio, offers literature on the most modern of its Black Top Units, the 101 Utility Spray Tank. This unit facilitates your work as it comprises three units in one: the Spray Bar for small application jobs, the Hand Spray for repair work, and Draw-Off Cock for crack filling.

(*Continued on page 24*)

4 NORDBERG DIESELS

serve this Rural Electrification Project

A large portion of the normal load is carried by a five cylinder, 2000 H.P. Nordberg Diesel as shown above, the largest and latest unit to be installed at the Reeve generating plant.

We are proud to fly the Navy "E" with the added star signifying that excellence in production has been maintained.

An unusually successful record has been es tablished by the Federated Co-Operative Power Association, rural electrification project serving a half dozen counties cen tered around its generating station at Reeve, Iowa. The perform ance of this plant and its rapid growth is evidence of its success Service was started in 1935 with two Nordberg Diesels of 75(and 1000 H.P. In 1939 a 1500 H.P. unit was added and in 194 the latest addition of a 2000 H.P. engine was made, the plan now totalling 5250 H.P., being among the larger all-Diesel gen erating stations in Iowa. That Nordberg Diesels were selected when units of greater capacity were needed is evidence of the satisfactory service given by previous installations

NORDBERG MFG. CO. • MILWAUKEE

NORDBERG

DIESEL ENGINES

BUFFALO-MADE NIAGARA WATER METERS

THE WARTIME NEED FOR WATER METERS

Conservation of critical materials and resources in wartime means continued use of water meters. Every old or new meter helps avoid waste of water, so reduces the need for additional pipelines, pumping stations, purification equipment and other costly construction.

Where unmetered water supply is inadequate, meters will stop waste at lower cost and with the use of less critical material than is usually required to provide additional supply.

Niagara Meters comply with victory-meter limitations on use of copper, because they have always been made with cast iron casings. They provide the same fine accuracy of measurement that all users of Niagara Meters have enjoyed for years past.

Write for our new bulletin: "Using your Buffalo-made Water Meters to Best Advantage in Wartime."

BUFFALO METER COMPANY
2902 MAIN STREET BUFFALO, N. Y.

WHICH OF THESE CATALOGS WOULD YOU LIKE?

(Continued from page 22)

Cleaning Existing Water Mains

508. You can get useful and informative bulletins from the National Water Main Cleaning Co., 30 Church St., New York, describing the way this company can rehabilitate existing mains to increase their carrying capacity. The company states that this method will enable you to increase the capacity of your distribution system without the necessity of installing pumps, pipes, or other critical material.

Economies in Pumping

509. The bulletin "Stretching Your Pumping Dollar," published by the Pomona Pump Co., 206 Commercial St., Pomona, Calif., is a helpful manual on pump application and operation for waterworks operators. It will assist you in taking full advantage of the many savings possible in your pumping plant.

Rugged Fire Hydrants

510. Information on the M & H hydrants furnished by the M & H Valve & Fittings Co, Anniston, Ala., is of particular interest to city officials who have the responsibility of protecting their communities during wartime. Outstanding features of the hydrants are the low friction loss, great efficiency, low maintenance, and rugged construction.

Grandstand for Municipal Auditoriums

511. Details on durable and comfortable grandstands for municipal auditoriums or playing fields are available from the Pittsburgh-Des Moines Steel Co., 3412 Neville Island, Pittsburgh, Pa., and will be of considerable help to you in planning post-war construction. The unit system of construction makes it adaptable for a wide range of uses.

Easily Operated Gate Valves

512. Do you have all the data you need covering the installation and use of gate valves in your water works? The Eddy valve has a number of distinctive features that are described in literature furnished by this company. Write to Eddy Valve Co., Waterford, N. Y.

Air Raid Signals

513. Municipal officials should have a copy of the air raid signal bulletin published by the Federal Electric Co., Inc., 8744 So. State St., Chicago, Ill. This bulletin outlines features of siren location and construction developed under actual air raid conditions in Europe.

Asphalt and Tar Kettles

514. The catalog being distributed by the White Mfg. Co., Elkhart, Ind., gives data on the company's asphalt and tar kettles. These kettles are fireproof with a hand- or motor-driven spray.

Mechanical Joints for Cast-Iron Pipe

515. Illustrated literature may be obtained on Carson clamps and mechanical joints that will stop leaks in cast-iron pipe. The glands and bolts are made of corrosion-resistant charcoal cast iron and will last as long as the pipe itself. Write to Carson-Cadillac Co., 1221 Pinson St., Birmingham, Ala.

Prevent Decay in Wood Structures

516. Information that is available through Cuprinol, Inc., 26 Spring Lane, Boston, Mass., describes the quick penetrating liquid furnished by this company that prevents rot and decay and gives lasting protection to fences and wood construction of all kinds.

Ideas in Water Meters

517. A folder being distributed by Hersey Mfg. Co., South Boston, Mass., describes interesting features of this company's new iron case water meters. Chief among them is the Magni-Vision bonnet which materially helps meter reading and the black baked enamel covering for the iron case similar to the treatment used for many years on the anti-frost bottom.

Truck Conservation

518. "Serve by Conserving" is the title of the leaflet available from Mack Mfg. Corp., Long Island City, N. Y. This leaflet gives step-by-step measures helpful in the maintaining of available truck facilities. Measures are outlined for intervals of 1,500, 6,000 and 18,000 miles.

Break-Point Chlorination

519. Water-works officials will be interested in the literature and assistance that is available from Wallace & Tiernan Co., Inc., Belleville, N. J., on break-point chlorination as a part of their treatment processes. This method of chlorination is now making it possible to deliver safe and potable water in many communities in quantities greater than the normal capacity of the treatment plant.

Vol. LVIII, No. 1 The American City January, 1943

Municipal Progress Since 1909

Some Significant Forward Steps in Which The American City *Has Cooperated During Its First Third-of-a-Century*

IT IS a significant coincidence that in the same year that THE AMERICAN CITY began publication—1909—a conference on urban planning was held in the Nation's Capital. This "National Conference on City Planning and the Problems of Congestion," as it was then called, has met annually ever since—in recent years under the shorter but more comprehensive title of National Conference on Planning. Its meetings and members have had a steadily growing influence on the planning and replanning of American cities.

Control of Land Uses

Looking back over the third-of-a-century, the most notable development in the control of urban land uses has been the start and the spread of the zoning idea. It was in 1916 that the United States Supreme Court, in the now famous case of *Welch v. Swasey*, upheld an act of the Massachusetts Legislature which divided the city of Boston into two districts, in which buildings were limited to heights of 125 feet and 80 feet respectively. That same year the city of Los Angeles, under a home rule charter, divided itself into residential and industrial districts.

It was not until 1916, however, that New York became the first city in the United States to adopt a comprehensive zoning ordinance; and it was 10 years later that zoning became established on an impregnable basis by the notable decision of the United States Supreme Court in the Euclid case, upholding comprehensive zoning all along the line. So rapidly has the zoning principle spread that more than 1,400 municipalities in the United States now have zoning ordinances. Planning commissions, also, are now functioning in about three-quarters of the cities of over 25,000 population, and in many of the smaller municipalities.

Structure of Municipal Government

The most far-reaching advance in the structure of municipal government during the last 33 years has, of course, been the spread of the commission-manager form of government. The appointment of the first city manager—in Staunton, Va., in 1908—antedated by about a year the appearance of Vol. 1, No. 1, of THE AMERICAN CITY. In June 1911 this magazine published an article by Richard S. Childs, later president of the National Municipal League, and now president of The Citizens Union of New York, suggesting that the short-ballot features of the commission form of government be combined with the city manager idea under what has since evolved into the council-manager charters adopted by some 540 municipalities and 6 counties throughout the United States.

New Perils—New Protection

About a third of a century ago even New York City owned not over a half dozen pieces of motorized fire apparatus—precisely four hose wagons, one steam engine, and a water tower—but the city was predicting that in another year it would have 150 pieces of motor apparatus and would top the world. Since then, advances have been

Modern cities need modern municipal equipment.

Four front covers during the last decade's depression years

largely in automotive efficiency. A great stride for public safety was made during the present war when the fire department stepped forward as the first line of defense against the consequences of possible air raids.

In 1909 there were criminals speeding from their guilty scenes and there was the traditional parking problem; but there was no police radio or parking meter. Radio began to catch on early in the last decade, and since 1922 has evolved first into two-way and now into frequency modulation which eliminates static and interference. The parking meter, in the last eight years, has battled its way on merit into 441 communities.

In street lighting the 33-year span extends from arc lamps to traffic safety lighting using reflectors and refractors to place the light on the street, keep it out of the sky, and reduce glare. There will be new triumphs in this field when the war is over.

Water Supply and Sanitation

The year 1909 was highly significant in the water-treatment field since it marked the first time that chlorination of municipal water supplies came to public notice. Hypochlorites proved their efficacy in sterilizing part of the Chicago water supply, and success in eliminating bacteria here encouraged its use in Jersey City, N. J. Purification by liquified chlorine gas was introduced in 1910 and was first used at Niagara Falls in 1912.

The value of chlorination can be shown by the steady decrease in the typhoid death rate. In 1909 the rate was in the neighborhood of 22 per 100,000 population while in 1940 the American Medical Association reported a low of only 0.48.

However, the cities were not satisfied with merely a "safe" water and demanded a supply that was soft, non-corrosive, and free of objectionable taste and odor as well. Consequently softening by the lime-soda ash process as well as by zeolites enjoyed a healthy growth. Taste and odor control by break-point chlorination was introduced in 1928 and now is firmly established. The European practice of ozone treatment took out its "second papers" and found itself employed occasionally in taste and odor control rather than in pure sterilization.

Sewerage systems and sewage treatment have clung doggedly to basic principles during this era, although there have been definite refinements in practice. Activated sludge practice has evolved from a radical experiment to an established and almost conservative process, and now bio-filtration is tracing the same course. Gas utilization has had convincing success and promises many interesting developments in the future.

In the field of refuse collection and disposal, the incinerator has been gradually supplanting other disposal methods during this 33-year period. Improvements in operation and design have resulted in its increasing popularity. Collection practice has evolved from haphazard practice to well-organized procedure, utilizing especially designed collection units working on scheduled routes.

Street Building and Cleaning

Street design has had a troubled career during this era of increasing traffic and truck loads. The concrete pavements emerged from a flat slab to one of varying thickness as the result of the historic Bates road tests. During the past ten years, the stabilized base type of street has been receiving grudging acceptance, particularly for use in residential areas. The Asphalt Institute, the Calcium Chloride Association, and the Portland Cement Association, all have given invaluable assistance to this development.

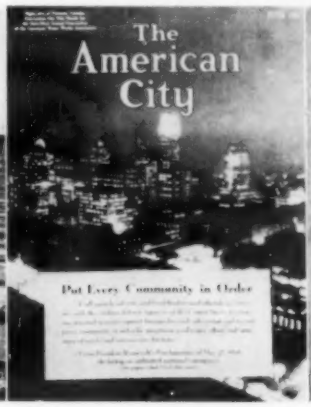
Street cleaning has taken a mechanical trend, but has not yet wholly supplanted the hand methods. Motor-driven sweepers make important economies possible where traffic and business conditions will allow their use. Flushers have improved in operation also during the third-of-a-century. Snow removal has been forced by the automobile to change from an unorganized program to an organized, systematic procedure utilizing mechanical loaders, trucks, and various salts to facilitate clearance.

Transportation and Accounting

City transportation, in the last six years especially, has risen in public esteem. The new generation of managers discovered that the public were customers instead of victims and that the industry would have to sell itself out of the red. It has done so, aided in the last year by the gasoline and tire rationings. It is now a partner of government—to an increasing extent municipally

Garbage Incineration

Sewage Treament



National Emergency

Wartime Service

owned—and has an opportunity to earn a long-term prosperity.

In the field of municipal accounting, it may be reported that the finances of hundreds of cities are in a sounder position than in 1909. Mechanized accounting, which has received increasing municipal acceptance during the last decade, now compiles and maintains prompt information on the condition of the budget, gets tax and utility bills out on time, keeps daily records of payments, and furnishes complete reports on tax delinquency. This trend will proceed apace after the war.

Light and Power Plants

Municipal electric plants have had a colorful career, being either praised highly or bitterly criticized. However, their success can in a great measure be attributed to the development of smaller highly efficient generating units, both diesel and steam. These overcome line-loss difficulties inherent in the large central plant that provides power over a wide area. The consistent success of the trustee type of management has largely eliminated the "politics" bugaboo that has frightened so many communities when considering this type of municipal utility.

Aviation

Quoting THE AMERICAN CITY of July, 1919, the Federal "Government is now taking steps to secure cooperation of certain municipalities in establishing landing fields primarily for the use of the Air Service and aerial mail." Only seven months later: "progressive municipalities have started work on public landing fields for aircraft." Seven years later there were 267 municipal airports; three years later 549; in 1938 there were 791, and today about 1,100. Improvements have been largely technical, with the runways and hangars trying to keep up with the evolving airplane. The future of aviation is beyond serious exaggeration and the cities will doubtless awaken to their opportunity to develop further this new municipal utility after the war.

Recreation

Parks and playgrounds have had frequent space in THE AMERICAN CITY since its very first issue. Thanks to the combined efforts of public agencies and citizens' groups, the recreation movement has made substantial progress during the third-of-a-century. More than a fourth of the 1,465 cities of 2,500 or more population now have at least one acre of park for each 100 persons, the standard set by the National Recreation Association. Between 1935 and 1940, park acreage in 819 cities showed an average increase of 9 per cent.

Housing as a Municipal Function

Back in 1909 municipal responsibility for housing conditions was recognized only in partial control by building and sanitary codes.

The passage of a third-of-a-century finds the housing problem far from adequate solution—but substantial progress has been made both in restrictive and constructive measures. The movement for public aid in the reclamation of slums and blighted areas, and in the provision of decent low-rent housing for families of low income, has taken hold to such an extent that the 1942 Housing Yearbook reports 501 official administrative housing agencies—444 of them municipal or metropolitan, and 57 regional, state, or national.

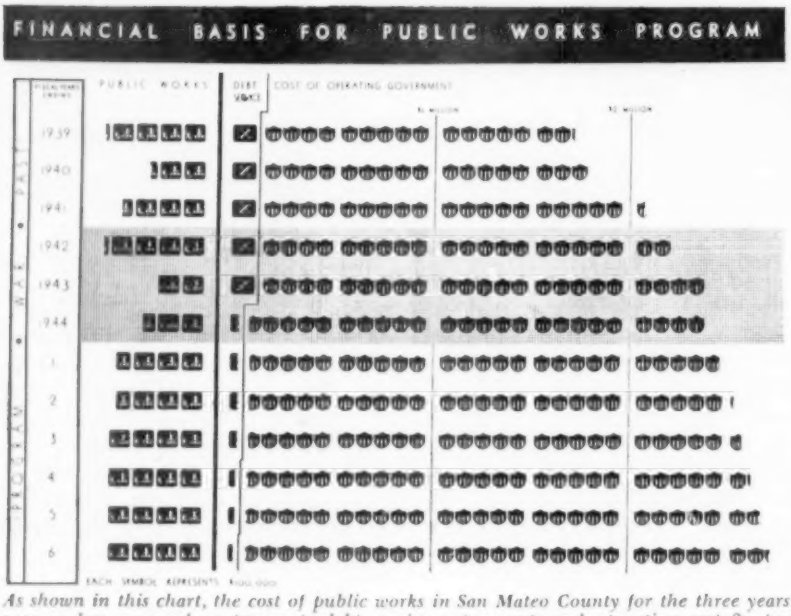
Advertising's Vital Role

Without a substantial volume of advertising revenue, it would have been impossible to finance the aid rendered by THE AMERICAN CITY during the past third-of-a-century in the various fields of municipal and civic progress sketched in the preceding paragraphs.

But it is not only as a revenue source that advertising in THE AMERICAN CITY plays a vital role. The advertising pages in themselves are of great interest and practical value to the municipal officials, consulting engineers, city planners, and other civic leaders in communities large and small throughout the United States.

This is doubly true: (1) because THE AMERICAN CITY is accepted as the logical medium for informing such readers as to standard products, new devices, and improved equipment and methods; and (2) because of the constantly reiterated stimulus to the building of better cities, towns, and villages created by the advertising pages as a whole. This information and this stimulus are of especial significance in current planning for post-war urban redevelopment.

A County Plans Its Post-War Public Works



As shown in this chart, the cost of public works in San Mateo County for the three years 1939-41 has averaged 14 per cent; debt service 4 per cent; and operating cost 82 per cent. Estimates for war and post-war years are also given.

WHAT its authors believe to be the first planned public works program* published by any county in the United States has been issued by the San Mateo County Planning Commission, of Redwood City, Calif. The material is presented in concise and graphic form in a pamphlet so attractive and easily read as to command careful study by the county officials concerned with the carrying out of the program.

Charts and maps, two of which are here reproduced, enliven and clarify the report. Others show tax rates, population growth, revenues, disbursements, and assessed valuations.

The program does not anticipate a commitment of funds beyond the first year's budget, but does indicate the probable availability of funds needed without assuming any special federal financing or relief funds. Each year the program will be revised in the light of changing conditions.

Ronald L. Campbell is Secretary and Planning Adviser of the Commission.

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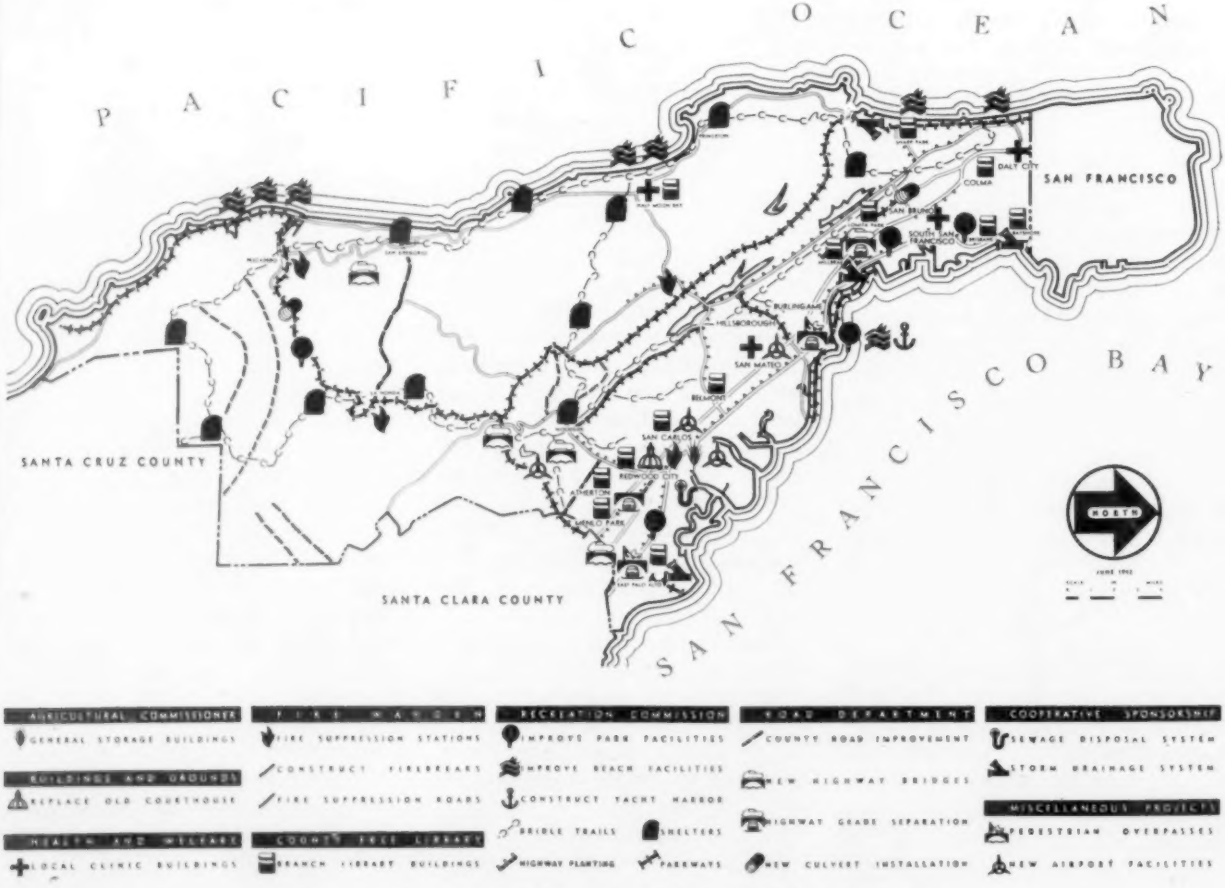
* The San Mateo report is dated June 1942. THE AMERICAN CITY has received from the Pulaski County Planning Board, of Little Rock, Ark., a somewhat similar report on "A Long-Range Program of Capital Improvements," dated August 1942. Can any county upset San Mateo's claim to priority for the nation?



Type and location of San Mateo County's Planned Public Works Projects

Water . . . Without Benefit of Priorities

Omaha Cleans Three Mains and Defers the Installation of Overhead Storage and Added Feeders

By J. C. Detweiler
Water Engineer, Metropolitan Utilities District, Omaha, Nebraska

DURING the spring of 1942, Omaha increased the capacity of certain trunk feeder mains on the water distribution system from 30 to 70 per cent virtually without the use of any critical materials—a few minor items were required—or a single wrestling match with WPB. This was done by having a hydraulic analysis of the distribution system made and then by cleaning mains that needed attention.

Increased Capacity Required

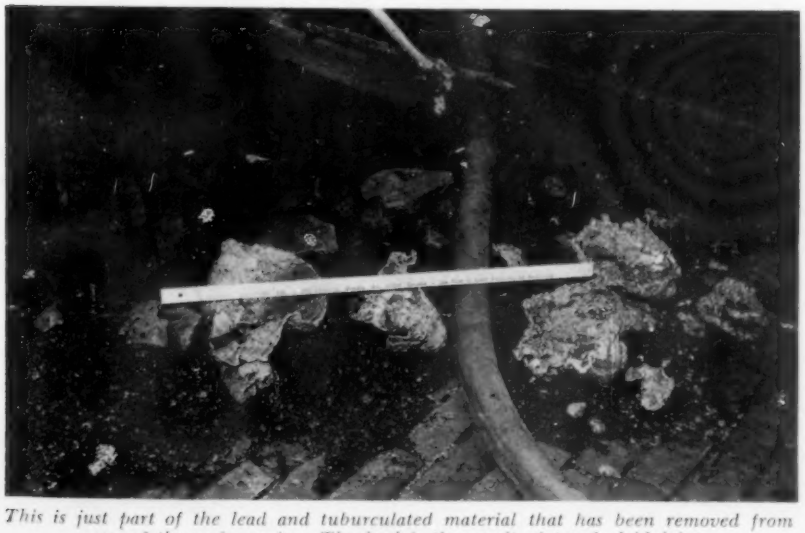
Omaha needed this increase in capacity to meet demands created by its important meat packing industry, its new war factories, and about 600 new homes. The packing-house district alone normally consumes about 25 per cent of the entire output of the Omaha plant, and when its demand began to grow the Metropolitan Utilities District had some anxious moments concerning the adequacy of its booster pumps and water distribution system.

Priorities Eliminate Added Storage and Feeders

Originally it was planned to install an elevated storage tank and several trunk feeder mains on the distribution system. However, with the restrictions placed on work of this type, it was decided to abandon the new construction and improve the distribution of water through other means.

There were three cast-iron mains involved in the cleaning operation. One was 30 inches in diameter and approximately 18,000 feet long; the second and third were both 24-inch mains, one 18,000 feet in length, and the second 15,000 feet. In 1940 the Pitometer Co., New York engineers, conducted a survey and discovered, among other things, that these mains had abnormally low pipe coefficients. In other words, they were not carrying water to their normal capacity. The first had a Williams-Hazen coefficient of only 79; the second, 90; and the third, a low of 62. The ages of these mains were 40, 28, and 40 years respectively.

The first step is to remove a section of the pipe preparatory to placing the cleaning device in the main. Here, workmen are cutting away the portion that is to be removed.



This is just part of the lead and tuburculated material that has been removed from one of the 24-in. mains. The lead is the result of poorly laid joints.

The actual cleaning work was done by the National Water Main Cleaning Co., New York, under contract with the Metropolitan District. This company, a specialist in water-main cleaning, divided the cleaning operations into sections varying in length from 1,300 to as high as 9,600 feet and cleaned each section separately.

Cleaning Operations

When cleaning a section, the operators would first shut off the main and then remove a portion of the pipe from each end of the section. They then would insert the cleaning device at the upstream end in the section that had been removed and replace the pipe with the

The water turns black and dirty as it flushes out obstructions. The cleaning device is now being forced through the line by water pressure.

cleaner in the pipe line. A short riser fabricated from steel pipe was placed at the downstream end to carry the discharged water and corrosion into the street.

With the riser pipe in place and the pipe at the upstream end reconnected, the operators admitted water under city pressure behind the machine, forcing the cleaning machine through the main. The entire project was expedited by careful planning and collaboration between district crews and the cleaning company superintendent. District crews did all the labor work and excavated around all pipe sections to be removed well in advance of the time scheduled for the actual running of the cleaner through the main.

An A. P. Smith mechanical cutting device was used to remove the necessary sections. These cuts proved to be very satisfactory; it was possible to replace the same section of pipe removed from the mains without the addition of any extra pieces. The use of Dresser couplings permitted the rapid closure of the main and easy removal of the same section of pipe in case a second run or subsequent cleaning operation was required.

One item of equipment that proved very useful on this sort of an operation was the Roustabout crane. This versatile little machine was able to handle all pipe sections and fittings involved in the cleaning operation. It was small enough to be placed where the work needed to be done and sturdy enough to carry the load.

Most of the material obstructing flow was tuberculation or corrosion caused by the action of the water. However, this was not altogether the case. Several chunks of lead were pushed out, evidently the result of improperly poured joints when the line was laid or repaired.

Results

Flow tests conducted at the end of the work gave gratifying results. The 30-inch main that had a Williams-Hazen coefficient of only 79 before cleaning now showed a coefficient of 120, thereby increasing the carrying capacity of this big main by approximately 52 per cent. Likewise, the coefficient on one 24-inch main was raised from 90 to 117, making an equivalent of 30 per cent increase in capacity, and the third main was jumped from a coefficient of 62 before cleaning to 110, allowing a surprising 77 per cent increase in the carrying capacity of that main.

Meets Increased Demands

The work, together with the installation of one connection between two trunk mains, increased the capacity of the mains in that section approximately 50 per cent —comfortably more than the increased demand for water. In 1942 the packing house district was consuming at times 60 per cent more water than it had for the same period during 1941, and there were no low pressure areas on this part of the system in 1942. Permanent taps for use in connection with subsequent pitometer studies were installed to determine the rate of retuberculation on these mains and to check the quantity of water carried by each main on an annual basis.

The successful completion of this work, represents a real and economical improvement to the district's distribution system. It becomes particularly important during these critical times when it is neither practical nor patriotic to buy pipe and other equipment necessary to expand the water distribution system.

The device has just pushed its way out of the 30-in. main. Notice how the water has become clear.

Fighting Crash Fires

By JAMES H. HANCOCK
Captain, Corps of Engineers; Post Engineer; and Fire Marshall, Maxwell Field, Ala.

THE sages tell us the law of averages will never be repealed, but I am inclined to remain skeptical—and slightly superstitious. It has been more than a year since a fire resulting from an airplane crash occurred at Maxwell Field, where the flying schedule is heavy. At times crash fires seemed imminent, but by hurried action, by the crash truck crew, they were avoided. Whenever I mention this somewhat astonishing fact, I knock wood.

I have not been in the military service long enough to refute the infallibility of the law of averages, but am convinced that, with proper training of eager and alert personnel, with the use of modern and effective equipment, the losses from crash fires on the airfield resulting from a "ground loop," a "nose over," a belly landing, or landing gear failure can be very definitely brought down.

My optimism does not extend to crash fires if the plane has fast fallen earthward miles from the field, and costly minutes away from the nearest crash truck. Mainly, and of necessity, we must concern ourselves with the prevention of crash fires at the flying field, and with their rapid and effective extinguishment. American aircraft now roaring across warring skies the world over are complicated and expensive machines which require much time, money, and brains to produce. In this global war, in which air power may be the trump card for final victory, we cannot afford to lose a plane. Many will be lost in combat. That is expected. But they must not be consumed by flames, lest they never see combat.

It is, of course, obvious to all how highly we regard the lives of our pilots, navigators, bombardiers, and other members of the aircrew. Our crash truck crews are told time and again that their real job is saving personnel. The plane, be it a comparatively cheap trainer or a costly Flying Fortress, is of secondary importance.

A soldier member of the Maxwell Field fire department in asbestos suit wades through a sea of fire while two fog nozzles clear the path.

Water and Foam

Because of its importance, I mention here and now our salient idea in combating crash fires. We believe the use of water at high pressure to be more effective than the commonly employed carbon-dioxide. Considering the specification of our crash trucks, it is my belief that they cannot carry enough carbon dioxide to conquer any sizeable crash fire. Conceding a point, a truck carrying both carbon dioxide and water would probably be adequate if a training plane was aflame. However, should a bomber catch fire, then twice as many carbon dioxide tanks as are carried on the usual crash truck would be needed.

Our answer is water.

The disadvantage of carbon dioxide come to fore also when magnesium parts of the plane are afire. Carbon dioxide only tends to increase the heat and the speed of oxidation, both results being highly detrimental to personnel and plane parts.

Furthermore, carbon dioxide must be employed at short range and by fire-fighters equipped with asbestos suits. It must be remembered that the occupants of the plane won't be wearing asbestos uniforms.

Water is the answer, for it can be used at long range, has the desired cooling effect, and at high pressure it can "knock out" flaming magnesium. Another advantage of water is its easy conversion from a solid stream to a fine spray.

Foam is the best auxiliary agent for use with water, as it was proved again in a recent incident at Maxwell Field.

Having taxied into position for take-off, a trainer halted and awaited the signal from the control tower. Soon the horsepower hummed deeply and the plane raced down the field. Instead of climbing gracefully to the sky, the trainer ground looped and came to rest upside down. Immediately the crash truck and ambulance sped to the scene and assisted the two occupants from the plane. To cover down the leaking gas and oil, foam was used. And a fire which possibly might have been ignited by sparks from the crash truck, ambulance, or official cars was prevented.

Speed

The element of speed must be noted here. In a race of split seconds the foam must beat the fire. And speed is the result of long, arduous training of fire-fighting personnel.

Before I came on active duty early in 1942 I was chief municipal engineer for the Southeastern Underwriters Association. My territory included six states and I traveled extensively from city to town to hamlet. I saw all kinds of fire departments. To me it seemed that the important problems confronting the personnel of most fire de-

Assistant Chief Hollis C. Taylor, Chief Howard P. Crews, Captain James H. Hancock, and Second Assistant Chief Judson H. Lewis chat about equipment.

A Maxwell Field crash truck crew, accompanied by a medical unit, race to their posts and speed to the scene of the crash. Intensive instruction comes first.

Assistant Chief Hollis C. Taylor demonstrates the method of overpowering the flames with the fog-nozzle, which has proved so successful at Maxwell Field.

partments were the filling of an inside straight and the finding of a shorter route on the checkerboard to the king squares.

As Post Engineer at Maxwell Field, one of my many roles includes that of fire marshal. Our personnel is a hybrid of 32 soldiers and 37 civilians, and we are gradually expanding. Fire Chief is Howard P. Crews, a man with two decades of fire-fighting experience in Alabama. Chief Crews, to use his own words, "combats the Axis by fighting fires before they start."

A soft-spoken veteran, he has molded a smoothly functioning blaze-beating squadron from his Army rookies and his erstwhile civilian firemen. According to Chief Crews, some of the soldiers sulked at their assignment to the fire department, but before long they liked their jobs. With breaking records as an incentive, the fire crew races through the drills, continually clicking minutes and seconds off their previous records. Chief Crews does the timing with a stop-watch.

A dearth of trained firemen is becoming evident now that the nation's manpower is being rushed into military service and war industry. Our department is constantly expanding to keep pace with the growth of the post and the mounting hours of flying time, and we have been steadily increasing our staff. Chief Crews and I made a recruiting drive through Alabama, gaining our goal in towns which had exceptionally active volunteer fire departments.

We were particularly interested in men who fought fires because of some innate desire, or because the job thrilled them. We knew well there were professional firemen with more experience available, but we chose the enthusiastic amateurs. In a short time, by a carefully planned and intensive training program, those men became more than adequate. They have pride in the department. They are efficient.

I make mention of these things, because I firmly believe that a propery trained and high spirited personnel is of paramount importance. It is also my conviction that firemen working at flying fields are more alert, more eager, and more serious about their jobs. The answer is simple. The high morale of aviation personnel is contagious. Their fire fighting is directly connected with the war effort. A pursuit plane or a bomber, and the men who fly them, are more important now than Farmer Jones's barn or Mr. Smith's grocery store.

Chief Crews' assistants are Chief Hollis C. Taylor, with 17 years' experience, and Chief Judson H. Lewis, with nine. They train the fire crew and pick the four-man teams for the crash trucks.

The Crash Truck Crew

Our crash-truck crews are trained to identify all types of planes and to know in each type the location of the ignition switch, battery, gas cut-off as well as the interior of the plane, so that rescue work is accelerated.

There is no standard suggestion for the location of the crash truck. To be considered are the layout of the flying field and the direction of the wind into which the planes land and take-off.

Plane crashes fall into four classifications: (1) any crash in which fire or leaking gasoline is not involved, such as a nose-over, belly landing, or landing-gear failure; (2) any crash in which a gas tank or gas line has been ruptured and gasoline covers the ground around the plane but has not caught fire; (3) any crash in which the plane or surrounding area is aflame because of spilled gasoline; (4) forceable entry, or any crash where forceable tools are necessary to release occupants of the plane.

The personnel of the crash truck should consist of three or preferably four men. No. 1 is the crew captain, in charge of the truck and all operations; in the absence of the Fire Chief, he is in command. No. 2 drives the truck, operates the pump and carbon-dioxide tanks. No. 3 and No. 4 work the water streams, the foam nozzle, and the carbon-dioxide horn. The keynote here is teamwork. Like members of a football team, they must carry out individual assignments. And only by constant and intensive drill can the details be mastered. The goal is saving lives and planes—and the seconds count.

The scene of the crash is cleared of onlookers, only officials being allowed near the crash. All important papers, bomb sights, and other valuables are removed to a safe place. When possible the injured or dead are removed at once. *Do not tamper with the plane in any way that would hamper an investigating board in determining the cause of the crash.* The crash crew stands by until relieved. Forceable-entry tools must be employed with skill.

Street Improvements, Wartime Style

A Quick Look at Rail-Salvage Work in Some Wisconsin Cities

UNQUESTIONABLY the most widespread activity in street construction and maintenance during these critical years has been in the removal of unused street-car rails. The American Transit Association and other agencies have estimated that there are approximately 300,000 tons of scrap steel available from this source. Although this is in no way enough to meet the demands of scrap-hungry steel mills—roughly 18,000,000 tons of scrap will go to the furnaces if the mills operate according to their proposed 1943 schedule—it nevertheless is important and vital to the war effort. Cities throughout the nation, with the help of the War Production Board and WPA, are making this program of prying the rails from their streets a major part of their street construction work.

Here is what has been happening in Wisconsin. Thirty-four cities in this state have been or are removing obsolete street-car rails. These cities originally had a potential of 14,450 tons of steel rails embedded in their pavement. Of this amount, approximately 3,000 have been salvaged.

Costs and methods of removal vary. In most places the municipality's share is met largely out of receipts from the sale of the steel scrap. On an average, a city will spend $84 to salvage one ton of rails. This same ton of rails will bring $20.75 if sold as scrap, $22.75 if suitable for rerolling, and $25.75 if it can be used for relaying.

Milwaukee

In Milwaukee, city officials estimated that 3,225 long tons could be salvaged from 55,000 lineal feet of unused double track. Since most of this was embedded in portland cement concrete, removal costs had to be studied carefully.

According to R. W. Gamble, Superintendent of Street Construction and Repairs, the city originally proposed that each individual piece of track be figured separately, basing the division of costs on the expected life of the pavement. In the case of new slab, the city's cost was to be low; however, in the case of old pavement that had practically reached the end of its expected useful life, the cost to Milwaukee would be proportionately higher. As sound as this reasoning appeared, it was never accepted by the War Production Board.

As a result, the city conducted this work as a WPA project, with Milwaukee's contribution limited to the salvage value of the steel recovered. Thus far, 840 gross tons of rails suitable for rerolling or relaying and 100 gross tons of scrap rail, tie plates, screw spikes, and miscellaneous items have been removed. The 11.6 miles of rails cost $56,000 to remove and yielded $19,000 when sold, making a net removal cost of only $59.50 per gross ton. The sale was expedited considerably by the fact that the reroll and relay rails were allocated by WPB and shipped directly by the city, thereby producing the ceiling price for the rails less freight. The 100 tons of scrap were sold locally.

In Kenosha, Wis., engineers soon learned that it is easier to remove the brick paving for the full track zone width than to channel out the rails such as is done on concrete streets.

This picture taken in Depere, Wis., after the rails have bee removed by channeling. Some of the officials in cities where th work has been been done call these "service stripes."

The rails were removed by cutting trenches 12 inches wide. Where double tracks were encountered, the trench was placed on the outside of the outer rail and the inside of the inner rail. This, the engineers feel, leaves the concrete in its strongest condition structurally.

Green Bay

Rails removed in Green Bay went directly into war production. A nearby shipbuilding company took all that were available. Much of the steel salvaged here was cut up and rerolled. This requires the rail heads and flanges to be burned away from the web. The mill will then take all three sections and roll them into straps or other needed shapes.

Since only single-track rails were involved, trenches were cut on the outside of each rail, thereby increasing the width of the center section. The fact that the rails were welded at most of the joints introduced difficulties in their removal.

Channeling operations are in progress on a Milwaukee street. Since double tracks are involved, the channel is cut on the outside of the outer rail and the inside of the inner rail to preserve the strength of the remaining concrete.

Kenosha

Typical of repaving practice is the process used in Kenosha, where ultimately approximately 50,000 lineal feet of rails will be removed. The new concrete is uniformly 7½ inches thick for the full track zone width of eight feet. In most cases where the track has been removed, the streets have been paved either with brick or stone macadam. The concrete is mixed in an old 14-E Koehring mixer and deposited by the mixer spout. It is struck off and finished by hand and cured under damp sand for 14 days. Expansion joints are placed at 100-foot intervals with dummy contraction joints at 20-foot centers between expansion joints. No distributed reinforcing, tie bars, or dowels are used.

Small portable Schramm air compressors and pneumatic hammers chipped out the old paving material. This was loaded either into trucks directly or hauled to side streets for reloading into trucks by bulldozers with elevating buckets. In some places, the material was loaded by hand into skid boxes, later to be picked up by trucks during free periods.

To finance this work, the government contributed $47,000. This was matched by $7,400 in city funds.

Municipal Home Rule in Wartime and After

"HOWEVER much increased federal power may be felt necessary during wartime, in the interest of maintaining our democratic system and of avoiding the dangers of excessive government regulation exhibited by our Axis opponents, the restoration of local authority in its proper fields must be brought about as soon as feasible after termination of the war emergency. Close federal-city relations will remain but they must be based upon cooperation, not dictation."

This is one of the major conclusions of a report* submitted at the War Conference of the National Institute of Municipal Law Officers, on December 2, 1942, by that organization's Committee on Wartime Legal Problems of Cities. Other conclusions are summarized in the report as follows:

It will be seen that the problems created for American cities by the war fall roughly into the following categories: the organization of civilian protection; municipal wartime revenue and finance problems; the use or devotion of municipal money, property, and facilities for war purposes; the dislocations resulting from wartime population shifts with attendant housing, transportation, and moral problems; the effect of federal war measures upon municipal activities; and the matter of dealing with personnel of the armed forces. These broad categories are not mutually exclusive nor perhaps are they sufficiently comprehensive, but they serve as an indication of the difficulties for which city attorneys have been called on to devise solutions.

In dealing with most of these matters the growth of centralization of control and authority, bringing about some degree of subordination of municipal to state and federal powers, is seen as perhaps the most striking feature. In all the matters summarized above, the role of the Federal Government is of great importance, and a tendency develops to seek the answer to all questions in Washington. In the conduct of "total" war such centralization of power may be required in the interest of efficiency, although there is always a question as to what degree of centralization best promotes efficiency and when the line is crossed which carries over into the field of bureaucratic inefficiency, delay and mismanagement. Even in wartime England, which we consider a much more centralized government system than our own, considerable scope is left for local action. Obviously, centralized authority is a necessity in matters military, but in the field of civilian defense the execution of basic protective measures must be carried out on a local or regional basis.

* See page 97 of this issue.

"The City Attorney Should Guard Jealously"

So far as it may be accomplished without causing unnecessary restraint upon the war effort, essential wartime measures should be conducted upon a sound legal basis, to the end that our government may remain a government of laws. Inherent powers to deal with emergencies should be reserved for use strictly when life and property are in peril and when shortcuts may not be avoided. Indiscriminate action under the guise of emergency powers, often based on nothing more than the belief that no citizen affected will be able under wartime conditions successfully to challenge assumption of illegal authority, tears down respect for regular legal proceedings which are the bulwark of our form of government and which the City Attorney particularly should guard jealously. Often the use of illegal methods of action is a veritable admission that the particular legal officers concerned lacked the understanding of governmental processes to achieve their purposes by legal means. Compulsion is a necessary sanction to effectuate many purposes of government, but cooperation can go a long way as shown by the experience of city rent control committees in the last war. Perhaps too often the examples of arbitrary actions by some federal administrative officers provide unfortunate examples of governmental weaknesses.

Fitting Chemical Precipitation to a Sewage-Treatment Plant

Flexibility in Methods of Treatment Is Feature of Plant Operation

By E. F. Leist
Superintendent-Chemist
Circleville, Ohio

CIRCLEVILLE is ideally located for the treatment of sewage by chemical precipitation. With a population of 8,000, our normal load from domestic sewage is not great nor the problems of disposal notable. However, being the county seat in a rich farming community, we have attracted industries such as canning factories, several dairies, a large paper mill that manufactures paper from straw, and two large dairy feed mills. Many of these operate seasonally and produce a wide variety of characteristics in the sewage. Consequently, we need a plant flexible enough to meet these variations efficiently. Chemical precipitation, operating during these periods of peak concentration, has been the answer here.

Put into service in May 1939, our plant relieves pollution in the Scioto River. It furnishes primary treatment with separate sludge digestion.

Plant Operation

Briefly our plant operates in this manner. We remove the coarse materials with a mechanically cleaned bar screen, shred these screenings with a Rex Triturator, and then return them to the sewage. A Simplex venturi meter measures the flow as the sewage proceeds to the mixing chambers. There Dorrco flash-mixers thoroughly disperse the chemicals introduced by Wallace and Tiernan feeders. Next the sewage enters a pair of rectangular flocculation tanks equipped with Dorr paddle-type slow-speed stirrers. At a designated rate of flow of one mgd the sewage is detained and flocculated for a period of 32 minutes and then is discharged directly into two primary settling tanks. Chain-Belt longitudinal flight collectors remove the sludge to hoppers at the influent end, and Rex Duplex sludge pumps transfer it to two 35-foot digesters equipped with PFT floating covers. Cast-iron heating coils in the digesters circulating water, heated by gas-fired boilers, maintain optimum digestion temperature in these tanks.

Uses Vacuum Filter

The digested sludge is finally dewatered by an Oliver-United vacuum filter and hauled to a sludge dump in one-yard dump cars operating on a narrow-gage truck.

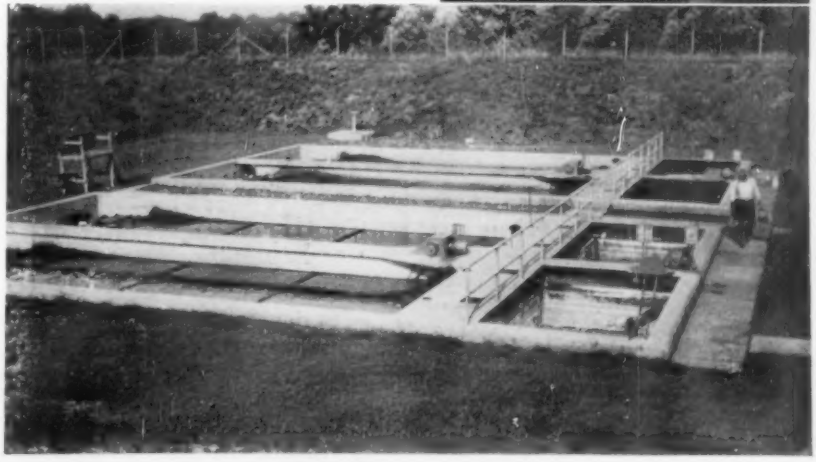
If conditions warrant, we give the effluent a final treatment of chlorine through a Wallace and Tiernan manually controlled chlorinator.

Methods Outlined

In an effort to improve the treatment and to make operation as economical as possible we conducted tests with various types of chemicals and flocculators. During periods of low flow, when the industrial load had declined, we experimented with methods of flocculation without chemicals. From these data we arrived at operating procedures that gave us results,

Right: A flashlight of a corner of the "lab."

Below: The flocculation and primary settling tanks where the floc-forming characteristics were observed.



Two 35-ft. diameter sludge digestion tanks with 21,000 cu. ft. capacity each, equipped with PFT Floating Covers.

admittedly short of complete biological treatments, but definitely superior to plain sedimentation. We have been able to develop a flexible method of treatment utilizing our plant efficiently regardless of the variations in the sewage flows.

Treatment Without Chemicals

The average daily flow through the plant during the winter and spring months is less than half the design flow, and early in the course of operation it was found that flash-mixing, without chemicals, did not aid in the sedimentation of sewage solids. A certain amount of turbulence was created in the sewage as it flowed through the piping, due to bends and Ys incorporated therein. This being true, because the piping was not flowing full as a result of the low flow, we found that flash-mixing could be eliminated.

We discovered a very definite increase in the removal of suspended solids when the flocculators were used. The effect may be seen clearly in the operating results given in the accompanying table. The peripheral speed of the paddles was 0.6 feet per second, and the tank detention was 48 minutes.

	Suspended Solids		
Period of Operation	Raw Sewage	Settled Sewage	Per Cent Removal
January, 1940	414 ppm	89 ppm	78.5
February, 1940	533	159	70.1
March, 1940	468	164	64.9
April, 1940	305	98	67.8
May, 1940	419	84	79.9
Average	428	119	72.2

Verifies Laboratory Tests

The main point of interest is that this bears out in plant-scale operation the laboratory tests showing that non-settleable and collodial solids can be removed in a reasonable time by subjecting the sewage to relatively short periods of mechanical flocculation. In the past, sanitary engineers have thought that these types of solids could not be removed by plain sedimentation no matter how efficient the settling unit. Suspended solids are removed readily enough, but collodial and dissolved solids generally do not receive this attention.

When sewage is subjected to quiescent sedimentation, the settleable solids drop out first; then a portion of the mechanically flocculable solids settle. Part of these may be collodial and become suspended and settleable by absorption on the surface of the large suspended particles, or by a "salting-out" process by high concentration of dissolved solids. We notice this in the laboratory when solids are settled in an Imhoff cone, and on long standing the familiar "after precipitation" takes place. It is necessary to offset the high concentration before a "salting-out" will occur.

Laboratory Results

Our laboratory tests, while not agreeing completely with the plant results, show very pointedly the increase in the removal of suspended solids as follows:

	Suspended Solids	Per Cent Removal
Raw sewage	413 ppm	—
60 min. settling, no flocculation	126 ppm	69.4
60 min. settling, 48 min. flocculation	30 ppm	92.7

The speed of the flocculators and the volume of the waste treated may be pointed out as two of the reasons for the difference between the plant-scale results. However, the results indicate definitely how flocculation removes suspended solids even without chemical treatment.

Flocculator Types

We experimented not only with the paddle-type of flocculator, but also with a second type loaned to us by the American Well Works, Aurora, Illinois. This was designed to be an aerator for grease flotation, but it proved to be of value as a flocculating device. This unit produces the flocculating action by circulating the sewage gently through a 14-inch tube suspended vertically in the tank. The lower end of the tube is three feet above the floor and the upper end is submerged from 9 to 10 inches. An electrically driven impeller moves the sewage, producing a velocity of 7 feet per second on the floor of the tank. The unit performs very satisfactorily. We have observed the following comparative results:

	Paddle Unit	Experimental Unit
Raw sewage (average)	425 ppm	537 ppm
Flocculated settled sewage (average)	103 ppm	94 ppm
Per Cent suspended solid removal (average)	76.0 ppm	82.5 ppm

These results, the average of a great number of tests, show an additional 6.5 per cent removal by use of the new equipment.

Chemical Treatment

Flocculation with chemicals is a complex process when explained analytically by a chemist. The effects may be ascribed to a number of properties. The insoluble precipitates which are formed enmesh suspended particles and sweep them down, absorbing dissolved solids or collodial matter on the way. Ionization also plays a part. However,

the sanitary engineer or the sewage-plant operator is primarily interested in results, as we were in Circleville.

We tested four types of chemicals under differing dosages and got the following representative answers:

	Suspended Solids	Five-day BOD
Chlorinated Copperas	89.3	77.4
Ferric Chloride	85.0	79.4
Alum	80.8	62.5
Ferric Sulphate	70-80	50-54

Chlorinated Copperas actually is a combination of ferrous sulphate, chlorine, and lime. The lime acts to adjust the pH. We use an optimum dosage on the plant-scale basis of 400 pounds of ferrous sulphate and 55 pounds of chlorine per million gallons. The raw sewage averages 519 ppm suspended solids and 607 ppm 5-day BOD.

Liquid Ferric Chloride was not tested as thoroughly as we would have liked because of the limited amount available. Dosage was on the basis of 42.5 ppm. During the test, we divided the flow so that one-half was treated chemically and the other flocculated and settled without chemicals. The sewage not receiving chemicals showed removal of suspended solids of 67.7 and BOD removal of 70.5. By comparing these with the figures in the table one can readily see how much the chemicals improve the degree of treatment.

Alum proved to be satisfactory both from the standpoint of operation and cost. The raw sewage had an average pH of from 6.9-7.1, which is within the effective range for flocculation with this chemical; thus we were able to eliminate the use of lime for adjustment. The rate of sedimentation was slower than with the iron-content salts used previously, but the lengthy detention time eliminated that difficulty. Only during periods of extremely high flows was there any floc carried over the weirs. Also the effluent had an improved color.

Ferri-Floc (ferric sulphate) also was studied but did not give particularly encouraging results in our plant. We tried dosages varying from 17 to 43 ppm with little improvement. Some improvement might have been made by adjusting the pH. However, this would have increased the cost so much that the treatment would have been prohibitive economically.

Results

The results of our tests demonstrated again that the removal of solids by chemical treatment is basically a mechanical action, with the chemicals producing flocs that hasten precipitation and subsequent solid removal. If plain sedimentation meets the sewage-treatment demands during most of the year, chemical precipitation becomes economical during the balance of the year because it utilizes the balance of the plant advantageously. Its extreme flexibility is of great advantage and meets the problems in Circleville both economically and efficiently.

Beating the Priority Pinch

How Water Departments Can Save Critical Material

SUBSTITUTE material has become a real part of water-works operation, according to Richard Bennett, Hydraulic Engineer for the municipal water works, Phoenix, Arizona, in a paper given before the California Section meeting of the American Water Works Association on October 30, 1942. Mr. Bennett discussed the various ways that water departments can contribute to the war effort by substituting and repairing methods that previous to this time have not been considered good or economical practice.

The time-tested rule that a meter should be scrapped when the cost of overhauling approximates 50 per cent of the cost of a new meter no longer holds true. The whole question now is whether it will be possible to obtain repair parts or not. Limitation Order No. L-154 definitely restricts the use of certain metals in parts of the meters, Mr. Bennet pointed out.

Pipe

Operators also must show ingenuity in regard to services when they are furnished. Several substitutes have been developed for copper pipe, some of which have been standard practice in many water works. Cast iron with screw joints presents possibilities, but some plants object to the brittleness of the metal. Lead is not a critical material at present. However, the tin requirements for the soldered joints will present difficulties. After the first of the year, manufacturers no longer will be able to make wiping solder containing up to 38 per cent tin for the installation of lead water service pipes. Lead pipe also is eliminated in many places for health reasons.

The advantages of steel cement-lined and wrought-iron pipes were analyzed also by Mr. Bennett. Tubeloy, a relatively new product, has promising possibilities, Mr. Bennett feels. It is simple to install, its physical strength is greater than lead, and the wall thickness is several times greater than that of copper. The manufacturer claims low initial cost and simplified construction; the metal is made from a patented lead alloy to which has been added a certain amount of lead magnesium and tin. Plastic tubing also is showing possibilities.

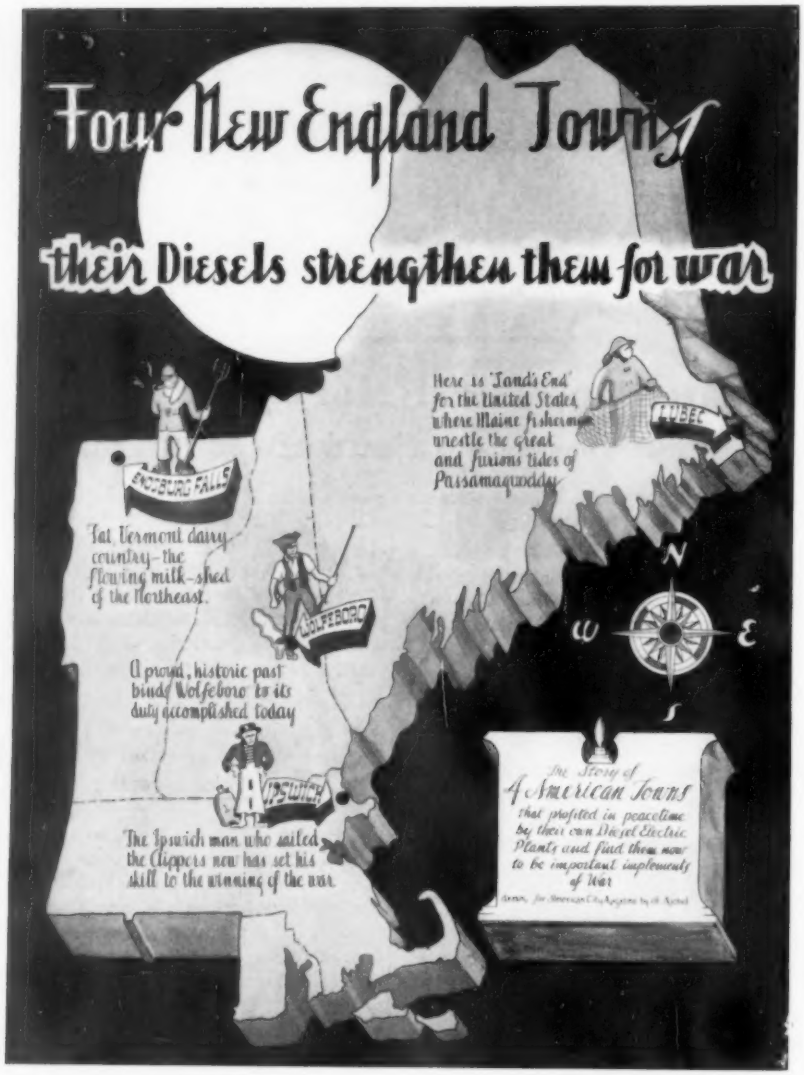
Water Waste Surveys and Main Cleaning

Cleaning mains in order to restore their carrying capacity was urged by Mr. Bennett. This method of maintenance will increase the carrying capacity of the pipes from 25 to 50 per cent or more. Pipe-cleaning technique does not harm existing mains nor require the raising of pressure which caused blow-outs in the weak joints; nor are corporation stops loosened. Distribution surveys, it was pointed out, also are useful in correcting deficiencies without using critical material. Many unnecessary uses of water can be eliminated, such as leakage from the distribution and unnecessary wastage due to flat rates.

Metalizing

No water-works executive today, Mr. Bennett says, should overlook the great saving that might be accomplished by metal spraying to keep existing equipment functioning. This type of treatment will quickly pay for itself with manpower and money saved.

Mr. Bennett also discussed thoroughly the possibilities in other branches of the field, such as well drilling, filter operations, and the manufacture of valves, pumps, and joining materials. He pointed to the possibility of using the new Armco wood drainage pipe for well casings and shallow cisterns since no vital material is required in its construction.


Four New England Towns
their Diesels strengthen them for war
Here is "Land's End" for the United States where Maine fishermen wrestle the great and furious tides of Passamaquoddy
LUBEC
ENOSBURG FALLS
Fat Vermont dairy country—the flowing milk-shed of the Northeast.
WOLFEBORO
A proud, historic past binds Wolfeboro to its duty accomplished today
IPSWICH
The Ipswich man who sailed the Clippers now has set his skill to the winning of the war
N
W
E
S
The Story of
4 American Towns
that profited in peacetime by their own Diesel Electric Plants and find them now to be important implements of War

By Art Michel

LET us consider four towns from as many New England states. One is a fishing town. One is a shipbuilding and manufacturing town. The third is a village center of dairy farming. The last is a resort town, that farms and manufactures on the side.

Besides beans and brown bread on Saturday night, these four towns possess at least three things in common: (1) a deep historical consciousness of their duties as American cities; (2) alert and intelligent town officials; and (3) their own municipal diesel power plants.

The wartime value of every town at home will be judged eventually on the battlefield. It cannot be otherwise. The town must evoke the fighting spirit in its citizens just as its factories keep up the supply of fighting equipment for its armies. It must maintain for the entire war the quality of the morale with which it entered the war, and try to heighten it.

The municipal diesel plants owned and operated by Lubec, Ipswich, Enosburg Falls, and Wolfeboro first of all reduce the consumer cost of electricity. Since this reduction is from 30 to 50 per cent of costs in surrounding territories, it follows that the cost of living in these towns loses some of its recent national growth. Of course, the home electric bill is only a *part* of the cost of living, but remember that these are rural towns and the consumers on their lines use more electricity than city dwellers do. And if the savings per year per family amount only to the cost of a $25 war bond, the government will still be pleased.

Second, there's the same reduction in cost to industries on the town's power lines. Since all these industries are doing war work, down goes the bill to the government.

Then the reduced cost of running the town itself. The diesel's revenue, even on the lowest rates, goes to reduce the tax bill, which in turn reduces the town taxes payable by John Q. Public—adding, need it be said, to his ability to wage his personal war on inflation and to pay his wartime levies.

Now let's take four representative slices of American small-town life and watch these benefits go to work on a bill of particulars.

400 Miles North and East of Boston

on the easternmost extremity of American soil lies the town of Lubec, Maine. By night it lies under the smoky, briny atmosphere of its fish-curing factories, with never a light showing out to sea. This is blackout territory—not for practice, but for grim, immediate protection of shipping against Axis raiders.

Lubec is a pioneer town, and seems a lonely town, situated as it is, like a sentry for all America. But this year there is nothing lonely about Lubec, for 1942 has seen it become the center of the sardine and herring industry. Its five huge packing companies, modern machinery and all, are frantic for help. Hundreds of thousands of iron-bound cases of smoked fish have gone to all territories of the United Nations. Townswomen are working at two or three jobs besides their housekeeping. Young people give up their time after school to help get out the pack.

Lubec is a proud town, proud of its past, its present, and its independence as an outpost—so proud, in fact, that Lubec's Municipal Power Plant, miles away from even the most casual tourist, is maintained

with such scrupulous care and cleanliness that you might think it meant for exhibition at Radio City. Superintendent Mitchell, we suspect, is a perfectionist, and well he might be, for the plant he operates has attained such a degree of perfection that Lubec's power and light bills are 60 per cent to 65 per cent lower than the same bills in the nearest neighboring towns.

As a further example of the meticulous thought given by Superintendent Mitchell to this power plant, consider his foresight on the oil problem. Lubec lies at the limit of transportation lines and in these times must manage from day to day on whatever it can get shipped. It has naturally ample storage for fuel oil—all diesel plants have. But lubricating oil is another story; here there are chances to reclaim it, and Mr. Mitchell has made the most of the lubricating oil he gets by the use of a Youngstown-Miller rotary oil purifier which removes not only the carbon generated during the oil passage through the diesels, but also removes chemical impurities that may exist in the oil as it comes from the tank cars.

The power plant is not old, but is already seasoned. The first engine, a 300-hp Fairbanks-Morse Model 32, dates only from 1939; the second engine, a Worthington of equivalent horsepower, from one year later. The physical performance of both engines attests to the care they receive, as well as to their quality, for the photographs you see here were taken with a 2-second exposure, without flash bulbs, while both engines were running. Puzzle: try to detect any vibration!

And now consider the 60 per cent reduction in power costs. The fish-processing plants, never very rich, are able to install more machinery, because of that low power rate, and to produce more needed food with one-tenth the manpower necessary without such machines. The low domestic rates are an added bit of security for a population always exposed to the economic hazards of a seasonal livelihood.

Down the Coast

past famous names like Penobscot, Casco, and Portsmouth lies the Town of Ipswich, Mass. Here Captain John Smith explored the land upon which, 308 years ago, Ipswich was to be incorporated. Here the Colonial dames began on their spinning wheels the lace industry that was to develop into the textile mills of today. Here are the great salt flats that yield the famous Ipswich clam, and here too are rolling pasturelands that sustain the renowned blue-ribbon herds of Ipswich.

Here also, when America came of seaman's age, were built great clipperships, and from Ipswich they sailed for the silks of China and the prizes of Java, or flew along in the Australian grain races.

Ipswich is a town and a tradition. And for all its age, for all its true Colonial appearance, it is a modern town with a razor-sharp awareness of its place and its duty in the American scheme. I cannot tell you what its war industries are, other than that they are many and diverse. I *can* tell you that Ipswich people, to the last man, are conscious of the war and of the imperative victory, every minute of the day. Their history as a town is not merely trotted out on holidays. It is a *living* history, told in every-day deeds and accomplishments.

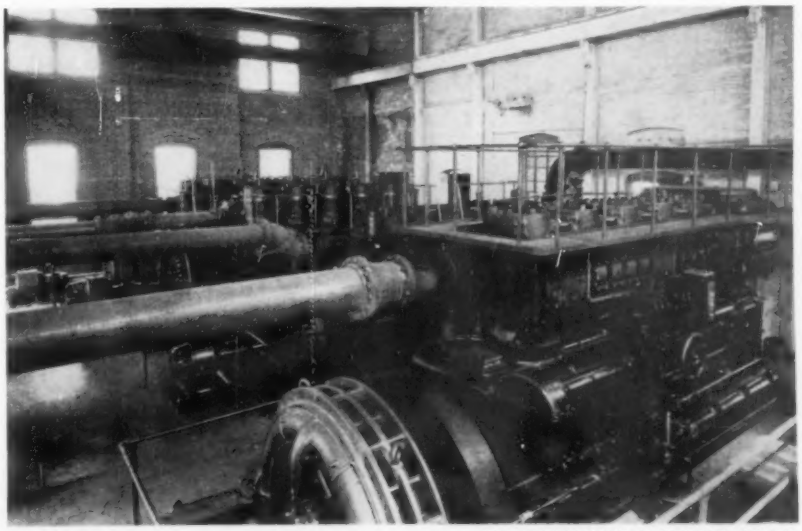
In these 15 years, the Ipswich power plant has reduced the old rates by more than 300 per cent and has cut the cost of town services by 400 per cent. In 1940 it reduced rates to a total of $7,000—and still reported a net income of $35,028, a surplus of $182,000, and a reserve of $43,000—and on top of all this, has returned $52,000 to the town in five years to reduce the town debt!

The four Fairbanks-Morse diesels at Ipswich total 3,175 hp., each new engine creating a demand for the next. Here again, an exacting supervision has added to the built-in efficiency of the diesels, and here each new installation has brought with it the newest in auxiliary equipment.

Ipswich people pay the second lowest rates in the populous state of Massachusetts. The best demonstration of what this means to the war effort is made by asking, "What would happen if this town power were suddenly withdrawn?" If that happened, the cost of living and the cost of manufacturing would skyrocket in Ipswich—and so would the cost of the war. The price of *at least* one war bond would be added to the family electric bill each year with the price of another bond thrown back in taxes.

Journey to Vermont

from Massachusetts, up to within 10 miles of Canada, and follow the turbulent Missisquoi River until you arrive at Enosburg Falls. This is dairy country, little else. A land of farms and prolific herds, a country of "Pay your own way as you go," and the independent Vermont character.



PHOTOGRAPH BY T. F. HARTLEY, BOSTON

Four diesel-engine generators furnish power for the people and industry at Ipswich.

Enosburg Falls is a center for a community of prosperous farms. For forty years this village has supplied to its people water-made electricity drawn by four water wheels from the current of the Missisquoi —and reducing power rates bit by bit every year.

But as the river has rushed by, it has also told a sad story. It has been narrowing; becoming more shallow every season. The Geodetic Survey map underlines this story, for on it is pictured the flat dry land extending from each side of the river for several hundred yards along its full course. This was once the bed of a mighty stream, a stream still swift but no longer a giant.

Since the turn of the century these prosperous farmers have seized upon each new mechanical advance in dairy farming. And as they installed new machines they drew and depended more and more upon their town's electric supply, just as Lubec did with its sardine factories.

The answer was a diesel, and in 1938 Enosburg Falls installed a 300-hp Fairbanks-Morse generating unit to operate when the river failed in season. For two years thereafter this engine was called upon for only 15 per cent of the total electric supply to the town, but in the summer of 1941 Northern Vermont experienced a great drought. This was unexpected, for the water during the spring thaws was high and swift. Now it happens that from 1934 to 1941 the farmers had increased their electricity demands by 100 per cent. On the power supply depended milkers, sterilizers, evaporators, and all other such equipment. Without them, or without electricty, the milk would spoil.

That summer for the first time the diesel was called into daily service, maintaining the ½c per kwh cost it had inaugurated at a standby unit. In 1942 the same thing happened, but in 1942 this milk—all the millions of pounds of it—was going to war. In powdered, evaporated, and solid form it was going to army camps, navy ships, and all our allies.

The Battle of Quebec

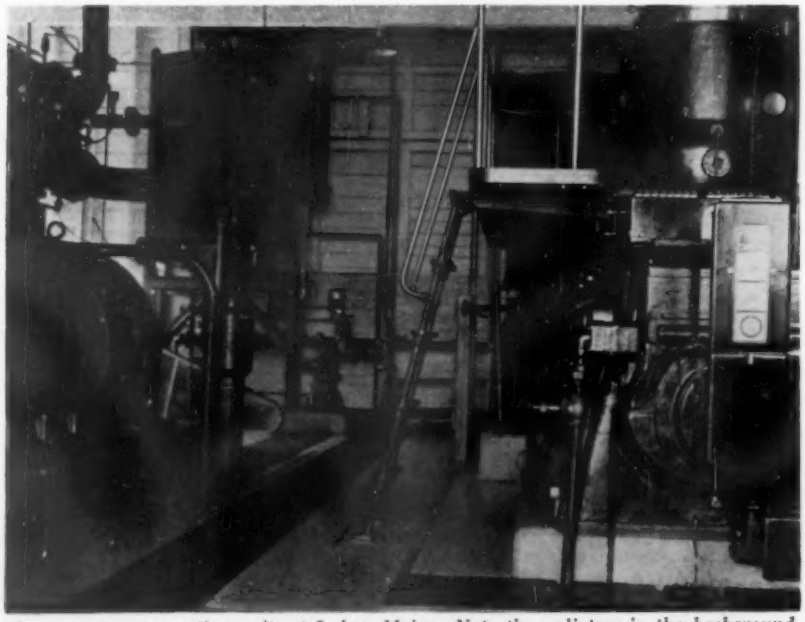
and its English hero, General Wolfe, was the direct reason for the name given to New Hampshire's White Mountain town of Wolfeboro. This town lies secluded on the shore of huge Lake Winnepesaukee, and looking at it from the air you would wonder how it could ever figure in the war effort. Well, it is not so important as a manufacturing town; its farms are good but there aren't many; its lumber has only recently been found needed. Wolfeboro is known as a resort town, one of the loveliest in New England, but that doesn't win a war. And I won't be ridiculous and say, "Well, it provides recreation for war workers," because war workers couldn't get there without cars and gasoline.

However, that may be just the point. Wolfeboro, although it does make some products used in the war, is going to be hard hit by rationing of gasoline. Not all towns can become wartime industrial centers, but all towns *must* survive.

Is Wolfeboro equipped for this? Let's see. In the depths of the last depression, Wolfeboro suddenly faced the loss of its largest industry. Its directors had announced that it would consolidate with a branch in another town. One hundred families faced the relief rolls as the result of that decision. But Wolfeboro for twenty-one years has had an aggressive and intelligent town leadership. The town, which at that time had three diesels, said to this discouraged firm, "Stay here and we'll give you your power and light for nothing until things get better."

This plan worked, and it worked with no increase in general rates. Now Wolfeboro has five diesels in a plant that is the apple of New Hampshire's eye. Up to 1942 there were four Fairbanks-Morse diesels totalling 1,170 hp, and this year another of the same make, of 805-hp was added to bring the total to 1,975—enough to see Wolfeboro through this war's eventualities.

Economically the story is the same as the one about Ipswich. Several thousands of dollars pay off town taxes every year; each engine is paid for from the surplus earnings of its predecessor; town services get current free and street lighting costs 450 per cent less than the state average. Wolfeboro's people have a stout backlog against inflation.



There are two generating units at Lubec, Maine. Note the radiators in the background used for cooling—instead of the customary cooling tower.

One Final Word

I have been arguing, not *against* anything, but *for* something—for the contention that these diesel power plants play a positive part in eventual victory, and that these four New England towns reflect similar communities elsewhere in the United States.

Cities Planning for Post-War Municipal Improvements—III

In the November and December issues of* The American City, *brief statements as to post-war planning were published from 96 cities of over 30,000 population. This month municipalities in the 25,000-30,000 population group are represented with 59 replies received by December 24. The questionnaire, identical with that sent to the larger cities, asked the following questions:

1. *Has your city begun to plan for post-war public works or other municipal improvements to be undertaken when materials and manpower are available?*
2. *If so, what are the principal types of projects contemplated in these plans?*
3. *By what departments of the city government are such plans being made?*
4. *What responsibilities and powers does your City Planning Commission have as to post-war planning?*
5. *Is your city setting aside any reserves, in war bonds or otherwise, for post-war public works?*

Every city with four exceptions answered "Yes" to Question 1. The answers to the other questions, with the name and title of the official furnishing the information, follow:

Amsterdam, N. Y.

Arthur Carter, Mayor:
2. Extension of main streets to eliminate bottlenecks, in two instances necessitating the construction of bridges. Building badly needed combination police headquarters, jail, and detention room
3. Bureau of Engineering of the Department of Public Works
4. Initiate plans, make suggestions
5. Budget for 1943 provides $25,000 for the police building

Anderson, Ind.

Harry R. Baldwin, Mayor:
2. Extension of sewage-disposal system, street paving, sidewalks
3. City Engineer
4. Mostly recommending
5. No

Ann Arbor, Mich.

L. J. Young, Mayor:
2. Construction of sewers, streets, sidewalks, curbs and gutters, water mains, and a number of buildings. Lawn extension improvement
3. Public Works, Water, and Park Departments
4. No special powers. Master plan has been completed for some time
5. No

Appleton, Wis.

John Goodland, Jr., Mayor:
2. New bridge across Fox River, city's share $65,000; one small bridge, $10,000; new police station, $40,000; remodeling and new apparatus for Fire Department, $35,000
3. Board of Public Works
4. Reply left blank
5. Yes, $150,000 in war bonds for improvements listed above

Bangor, Maine

Frederick D. Farnsworth, City Manager:
2. Housing and street paving
3. Housing is in tentative state. Street paving plan being done by Public Works Department
4. We do not have a Planning Commission. State Legislation is being sought for this purpose
5. No. It is not permissible under existing State Law

Battle Creek, Mich.

N. G. Damoose, City Engineer and Director of Public Service
2. Water mains, storm and sanitary sewers, sidewalks, curbs, gutters, and pavement for all streets within city limits. Bridges, secondary sewage-treatment and water-conditioning plants
3. Engineering Department
4. No planning commission
5. Financially unable to set aside reserves

Bellville, Ill.

W. C. Johnson, City Engineer:
2. Extensions of sanitary and storm relief sewers, and enclosure of open streams as conduits. Enlargement of sewage-treatment plant. Widening, paving and resurfacing thoroughfares
3. Department of Engineering
4. Advisory
5. No. Only present resource is accrual of city's share in State Motor Fuel Tax

Beverly Hills, Calif.

B. J. Firminger, City Clerk:
2. Incinerator, shop, and garage
3. Engineering Department
4. No planning commission
5. Yes, sufficient for above purpose

Clarksburg, W. Va.

Roy F. Ash, City Manager:
2. New crematory, new city building, sewage-disposal plant
3. Engineering Department
4. No planning commission
5. No, not yet

Concord, N. Hamp.

Charles J. McKee, Mayor:
2. Public buildings, street improvements, parking lot, swimming area, airport improvements, and equipment replacements
3. Various departments in cooperation with City Planning Board at the request of the Board of Aldermen
4. Advisory, preparation of capital budget, listing of proposed projects under Public Works Reserve
5. Not permissible under state statute

Council Bluffs, Ia.

S. W. McCall, Mayor:
2. Widen and deepen Indian Creek sewer outlet, paving, and construction of viaduct and sewage-disposal plant
3. City Engineer
4. Reply left blank
5. No

Cranston, R. I.

Purchasing Agent:
2. Reply left blank
3. Reply left blank
4. Reply left blank
5. No

Dubuque, Iowa

A. A. Rhomberg, City Manager:
2. Sewage-treatment plant, water-softening plant, city hall, and airport
3. Departments of Engineering and Water
4. Projects must have approval of City Planning Commission before proceeding
5. Yes

East Cleveland, Ohio

Charles A. Carran, City Manager:
2. Widening, replacement, and re-surfacing of pavement; new sewers, water mains, sidewalks, and electrical conduits; park and playground development; city building construction
3. Engineering Department
4. Approved general program as well as specific improvements
5. No

Eau Claire, Wis.

W. J. Mills, Vice-Mayor:
2. Paving and street improvements, bridges, schools, and garbage disposal
3. Board of Public Works and Engineering Department
4. All powers granted by statutes
5. Yes.

Easton, Pa.

Chester E. Rogers, City Clerk:
2. Reply left blank
3. Committee composed of Director of Streets and Public Improvements, City Engineer, architect for Planning Commission
4. Appropriate action will be taken as report of above committee is submitted
5. Not as yet

Elyria, Ohio

Joseph Q. Petro, Mayor
2. City-wide storm water sewer system; water main extension; new intake at water pump station
3. City Engineer
4. City has no Planning Commission
5. No

Fargo, N. Dak.

Ted O. Olsen, President City Commission:
2. Planning Board just voted a $300,000 bond issue for improvements on City Airport—if and when necessary and restricted by war regulations
3. Reply left blank
4. Passes on all improvements
5. No legal provision in state

Fitchburg, Mass.

2. Construction of highway buildings and water mains
3. Public Works, Water, and School Departments
4. Recommending agency only
5. No

Gasden, Alabama

J. Herbert Meighan, Chairman, Board of Commissioners:
2. Sewer and water extensions; opening new streets; paving program, development of 3 park sites purchased for post-war development
3. Department of Public Works
4. None
5. No funds available because of loss of revenue from gas tax and repeal of state-operated liquor stores in this county, together with increased operation costs due to 20 per cent increase in population

Galesburg, Ill.

Arthur O. Nordhielm, City Engineer:
2. Paved streets, street widening, underpasses, overhead bridges, storm sewers, and reconstruction of municipal buildings
3. No plans available as yet
4. Plans by Engineering Department approved by City Council
5. No

Great Falls, Mont.

W. P. Harrison, City Clerk:
2. Permanent pavements, storm drainages, and park improvements
3. City Engineering
4. Authority granted by City Council to submit plans
5. No. They are to be financed by bond issues and anticipated federal grant

Gren Bay, Wis.

John Tease, Comptroller:
2. Storm sewer, bridge, municipal garage
3. City engineer
4. None
5. Yes

Greenville, S. Car.

C. F. McCullough, Mayor:
2. Streets, storm sewers, farmers' market, bridges
3. Engineering Department
4. Advisory
5. No

Hackensack, N. J.

Carl W. Wright, City Manager:
2. Police station and office building; addition to sewage-treatment plant; street improvements; park additions
3. City Architect and City Engineer
4. No planning commission
5. Yes

Hagerstown, Md.

R. H. Sweeney, Mayor:
2. Streets, sewerage, and water improvements
3. Street, Water, and Sewer Departments
4. Reply left blank
5. Yes

Haverford Township, Pa.

A. C. Williams, Director of Public Works:
2. Curbs, sidewalks, street paving, sanitary sewers, parks
3. Highway and Sewer Departments
4. No planning commission
5. No

Haverhill, Mass.

Clinton Foster Goodwin, Chairman Post-War Planning Committees:
2. Street and highway improvements, new buildings including a municipal auditorium, schools, buildings for street department and city purchasing agent, improvements to park systems, studies for industrial growth of the city, and many improvements to existing facilities
3. Practically all departments of the city government are sponsoring projects
4. The post-war planning committee selects and recommends projects to the Mayor and City Council
5. Not at the present time

Hazleton, Pa.

James W. Kilner, Mayor:
2. Reconstruction of roads and improvements of road, sewer, playgrounds, garbage disposal, and health systems
3. City Council
4. No planning commission
5. No

High Point, N. Car.

E. W. Knox, City Manager:
2. Sewers, water mains, public buildings, streets, and bridges
3. Department of Public Works and Division of Engineering
4. Advisory
5. State law does not permit. Effort will be made in 1943 to amend present law

In Time of War Prepare for Peace

Planning now for post-war public works is urged strongly by Major General Philip B. Fleming, Federal Works Administrator. In an address on December 14, before the Washington Building Congress, General Fleming said:

"As I see it the type of planning for public works which we now need is one in which the preliminaries will be gotten out of the way before the war ends: the site will be acquired, the legal conditions will be met, the plans for financing will be made, the blueprints will be drawn and the specifications written. And then, in the hour of need, we can pull the blueprints out of the cupboard, hand them to the contractor, lead him out to the side and say: 'You begin digging here at 7 o'clock tomorrow morning.'"

Inglewood, Calif.

Raymond V. Darby, Mayor:
2. Water main replacement, fire hydrant installation, street resurfacing, sewer installations, city yard improvement, drainage projects, Police Court building, and recreation facilities
3. Water, Street, Engineering, Building, and Park Departments
4. None. Our City Planning Commission has no power in any instance; it just recommends
5. The City of Inglewood is not financially able to set aside any money for such works

Kearney, N. J.

2. Extension of storm sewers, replacing water mains, rehabilitation of public buildings
3. Engineer
4. Recommendations
5. No

Lima, Ohio

F. E. McClain, Mayor:
2. Incinerator, water storage and treating facilities, sewers, street improvements, city office building
3. Engineering and Water Departments
4. None
5. No

Lubbock, Texas

M. R. Smith, Jr., City Manager:
2. Water-works improvements, sanitary sewer, and street improvements
3. City Engineering Department
4. None
5. Yes

Mansfield, Ohio

W. J. Locke, Mayor:
2. Traffic circles, railroad overpass, new water reservoir
3. City Engineer
4. None
5. Yes

Miami Beach, Fla.

Claude A. Renshaw, City Manager:
2. Street, sewers, water-works improvements, and park improvements
3. Water plans by Water Department, all others by Engineering Department
4. None
5. A very substantial sum
5. No

Moline, Ill.

Robert M. Bennell, City Civil Engineer:
2. Sewers, pavement, storm drains, and water mains
3. Engineering Department
4. No planning commission
5. No

Muskegon, Mich.

George F. Liddle, City Manager:
2. Sewers and pavements
3. City Manager's Office
4. Not functioning—to be revived after Jan. 1, 1943
5. No

Nashua, N. Hamp.

Eugene H. Lemay, Mayor:
2. Finish sewer project started before the war; widen Main Street
3. Board of Public Works
4. No city planning commission
5. No

New Albany, Ind.

C. Robert Brooks, Mayor:
2. New Court House, City Hall, 3 fire houses, possibly 100-bed hospital
3. Legal Department
4. No planning commission
5. No

Newport News, Va.

R. Cowles Taylor, Mayor:
2. Public works projects of every character
3. Public works and finance departments
4. None

Oshkosh, Wis.

George Oaks, Mayor:
2. Sewers, stadium, river shore improvement
3. City Engineer
4. No planning commission
5. Yes

Otumwa, Ia.

David A. Nevin, Mayor:
2. Sewers
3. Engineer's Office
4. No planning commission
5. No

Petersburg, Va.

Joseph M. Hatchett, City Manager:
2. Improvements to water distribution system, installation of new mains, new incinerator
3. City Engineer
4. No planning commission
5. No

Pittsfield, Mass.

Fred D. Retalluk, President, City Council:
2. Water-works and sewer extension, highway improvements, bridges, municipal buildings, infirmary, alteration to public school buildings
3. Special committee
4. No planning commission
5. No

Port Arthur, Texas

BILL N. TAYLOR, City Manager:

2. Water-works improvements, street paving, storm sewers, pumping stations for storm sewers, and central fire station
3. By consulting engineers and architects
4. We do not have a city planning commission
5. Yes

Quincy, Ill.

EDWARD J. SCHNEIDMAN, Mayor:

2. New city hall, streets, alleys and sewers
3. Engineering Department
4. No planning commission
5. No

Poughkeepsie, N. Y.

HAROLD R. DEAN, Superintendent, Public Works Department:

2. Sewage-disposal plant, improvement of water distribution and sewer systems; street, highway improvement; stadium, buildings
3. Department of Public Works and Board of Education
4. Advisory
5. Yes

Raleigh, N. C.

ROY L. WILLIAMSON, Commissioner of Public Works:

2. Water and sewer extensions
3. Department of Public Works
4. None
5. Not yet—contemplated

Salem, Mass.

EDWARD A. COFFEY, Mayor:

2. Problem of removal of sewerage in river, grade crossing elimination, extension of sewer and water
3. Mayor—Council and heads of departments
4. Generally to supervise, arrange, and suggest. Plans are submitted to this board
5. No

Santa Ana, Calif.

WILLIAM C. JEROME, Auditor:

2. Drain sewers and highway improvement
3. Sewer, Street, and Water Departments
4. General advisory
5. No

Sheboyan, Wis.

ARTHUR L. BOLEY, City Engineer, Secretary of City Plan Commission:

2. Complete separation of storm and sanitary sewage, extension of sewer and water mains, paving and repaving, and other street improvements, municipal dock, lake shore protection, bridges, improvement of municipal buildings and parks, and municipal airport
3. City departments have cooperated to create a pool of over $4,000,000 worth of work
4. The City Plan Commission is acting as an agency for receiving and passing upon prospectuses and for formulating a long-range program, together with its financing and reporting same to the Common Council
5. Yes

Taunton, Mass.

MERRILL D. ALDRICH, Mayor

2. New central fire apparatus housing building and installation of new fire-alarm system, new water reservoir, sewage-disposal plant, and new school
3. Departments of Fire, Water, Sewer and Public Buildings, with approval of the Council and Mayor
4. To make the recommendations to be submitted to the Council for their approval
5. Not as yet, but the plan is expected to be put into operation very shortly

Tuscaloosa, Ala.

LUTHER DAVIS, Mayor:

2. We have had a survey made—and that report has not been filed as yet. We are, however, planning to do considerable repaving of streets and improve sewer system and water works
3. Department of Streets and Water Works
4. Our local governing body, consisting of the City Commission and City Engineer, are working on these improvements
5. Yes

Warren, Ohio

ROBERT H. ROBERTS, Mayor, and W. S. Harvey, City Engineer:

2. River retaining walls, storm sewer trunks, elimination of grade crossings, highway, street improvement, and recreational facilities
3. Mayor and City Engineer
4. They will be consulted on every change that is made within city
5. No. We are operating on a small tax rate—$18.41 per thousand dollar valuation—city of 54,700 population. All improvements would have to be submitted to voters

Warwick, R. I.

HEDLEY SMITH, Executive Secretary:

2. City-wide extension of all basic utilities and ultimate establishment of permanent fire company to correct present volunteer system
3. Six-year capital budget program developed through the cooperation of the National Resources Planning Board
4. Is represented, through its Chairman, on the Programming Committee, which coordinates and reviews long-range capital improvement programs. All preliminary research work and tables for projections were prepared by the City Planning Board

West Allis, Wis.

IRVIN F. KNOEVEL, Comptroller:

2. Storm sewers, library addition, high school swimming pool and stadium, incinerator, park development, community center, street widenings, and bridges
3. City Engineering and Public Works Departments
4. None
5. Yes

Wyandote, Mich.

F. W. LIDDLE, City Engineer:

2. Combined sanitary and storm trunk sewers, catch basins, brick manholes, sewer leads, cast iron water mains, concrete pavement including curbs and street drainage, concrete sea wall, storehouse and garage, shelter and concession building, wading pool, rehabilitate hospital and nurses homes, parking area at hospital, community center building, swimming pool, park areas, police station and courts building, hose tower, rehabilitate fire station and construct new fire station
3. Engineering Department
4. No city planning commission. Planning done by the Engineer in collaboration with various department heads. All powers and responsibilities rest with City Council on a pay-as-you-go basis, with low bonded indebtedness and can meet emergency when same arises
5. No city is

Zanesville, Ohio

MRS. E. L. LECHNER, Secretary to the Mayor:

2. Water softening system, improvement of streets, and reconstruction of sewer system
3. Water and Engineering Departments
4. City Planning Commission is inactive
5. No

When We Make the Peace

By LOUIS FISCHER

WE MIGHT as well make up our minds that if America does not participate in an enlightened peace which improves the world there will be no peace. There will be another major war and we will be drawn into it as we were twice in twenty-four years. The United States may be in a mood of self-centered isolation and disgust with Europe when the hostilities cease. If that induces America to remain aloof from post-war reconstruction we will have wasted half our war effort. Moreover the economy of the United States would suffer. . . .

Two things can be done immediately: the public can voice its determination to have peace which goes deep, which goes beyond map-carving, which tackles the social, economic, and political causes of wars. The public can put into office and into positions of responsibilities men and women to whom principles are dearer than privilege, and decency dearer than dollars, to whom the welfare of the common people is more important than the advancement of special interests, whose first allegiance is to human rights and not to property rights, who have a social consciousness and not merely a strong party-machine backing, who have ideals and love of humanity, who are not stick-in-the-mud old fogies with sclerotic brains and a devotion to everything that was, who are forward-looking and imaginative. There are such. The diplomatic services of the democracies should immediately be cleansed of the numerous snobs and appeasers whose pro-fascist attitude towards Abyssinia, Spain, and Czechoslovakia helped make this war. All servants of democracy should be persons who automatically translate democracy into the elimination of slums, equal opportunities for Negroes, social security, a minimum wage, no speculation in land values, development of economically backward areas, honest business practices, collective bargaining between employer and labor, free speech, free medical aid to the underprivileged, free higher education for the poor, freedom from racial discrimination, and freedom from worry over unemployment and old age. True democracy within countries would conduce to peace between countries.

From "Dawn of Victory," published 1942 by Duell, Sloan & Pearce, Inc., New York.

Complete Modernization of Tax Office Methods

By W. S. Curlee
Tax Assessor and Collector
Fort Worth, Texas

SHORTLY after our present administration took office in the latter part of 1939, we began a detailed study of the records then in use by the Fort Worth office and many other tax offices throughout the state. It was our opinion that the old system could be materially improved by substituting a more modern stream-lined system. This remodeling included:

1. A modern building record, showing legal description, owner, type of instrument filed, lien holders, and other data which would not only form an abstracting record but in addition carry all data pertaining to type of improvements, cost price, unit value as placed by the assessor, and all information pertinent to the assessing of the land itself. This permanent record is regularly abstracted from the county deed records.

2. A revaluation program of both real and personal property was completed in order to base assessments on current market values and to equalize these valuations.

3. A unit-tax ledger accounting system to facilitate collections, to efficiently account for all levies made against real property in the taxing district, and to insure correct daily credit postings by balancing to control totals especially set up for that purpose. Each parcel of property in the taxing district is recorded on an individual ledger sheet with a chronological history of all taxes paid and unpaid.

4. Reorganization of the tax office into five coordinating units: personal property assessment, real property assessment, current tax collection, delinquent tax collection, and technical supervision, comprising two sub sections, control desk and accounting.

Organization chart of the office of tax assessor-collector at Fort Worth

How the System Works

The current roll, though similar to the conventional tax roll, is not utilized in the same manner as the conventional roll, since no credits are posted to the roll itself and it is of no value for research or abstracting purposes. The roll, as a by-product of the posting of taxes to the unit ledger sheet and tax statement form, becomes a practical proof journal by which a close control is kept of the tax ledger sheets and tax statements.

After balancing this journal by additions—for which purpose value controls have been set up—the corrections made to the proof journal (or roll) are carried to both the statements and unit tax-ledger sheets, thus theoretically putting these in balance with the value control. However, to prove the accuracy of these changes a trial balance is made of the unit ledger sheets. Upon arriving at a balance, the total credits for each letter of the alphabet are posted to the tax-control card for that letter, thus keeping a perpetual record (inventory) of outstanding taxes for the current year. To prevent loss of the individual unit ledger sheet and to guard against misfiling of it, the ledger cards and all assessing records are assigned a corresponding basic account number. A "sectional" trial balance is also taken and balanced against the over-all control accounts. Deputies serving the public at the counter quickly adapted themselves to this new unit ledger and found it convenient to get tax data from the Remington Rand filing cabinets in which these records are housed.

Tax Statements

The simultaneous production of a tax statement at the time the ledger sheet and the roll is made up automatically provided a tax statement to completely synchronize with the tax roll. This was accomplished by four Burroughs tax-computing bookkeeping machines.

In order to make these statements simultaneous, we designed a tax form to serve all purposes and one which can be easily inserted into the machine, properly coordinated as to name, address, account num-

ber, description, value, and the amount of tax. Suitable waxed carbon produces two double sets of statements easily separated and vowelized for mailing purposes, which feed properly into window envelopes and are conveniently and easily handled by the cashier at the time the tax is paid. After the tax statements are made up, they are separated and vowelized, and one set mailed to the taxpayer. The other set is filed in alphabetical order by ownership. The office file identifies all property owned as of January 1 and permits the collection department to produce duplicate statements without inconvenience to the taxpayer and without loss of time during the rush period. After the first delinquent tax date is passed, these duplicate statements are used for the second mailing request payment of current taxes unpaid. Using a single parcel of property as a key, statements of unpaid taxes by each owner are readily assembled for mailing by referring to the duplicate tax statement file for all property owned and by checking against the ledger for unpaid items.

Advantages of Unit Ledger

All data on the unit tax ledger sheets are legible since both debit and credit postings are by machine.

Debit postings, including the yearly posting of current taxes, and daily credit postings, are rigidly controlled and must balance to the penny.

Transferring of delinquent taxes to delinquent ledger is eliminated, the unit ledger sheet automatically forming the delinquent file if the tax is not paid.

All accounting data covering all years is centralized in one file.

The preparation of the roll, statements, and ledger cards simultaneously eliminates the necessity of writing these items separately. It also makes unnecessary the checking for accuracy of posting, because the machine totals must balance with the predetermined values as set up on the master value control, thus making necessary only one check to verify transcription of name, address, and property description. It makes all information available for an efficient, rapid outside audit with much less expense to the city.

ORIGINAL

NOTICE OF TAX DUE
CITY AND SCHOOL
FORT WORTH, TEXAS

1942

ACCOUNT NUMBER	VALUE REAL ESTATE	VALUE PERSONAL	TOTAL TAX	AMOUNT PAID
153	1000.	500.	43.95	

MAIL WITH REMITTANCE

NAME, ADDRESS, PROPERTY DESCRIPTION AND ITEM NO.

John Doe
Street
City.

12930

Lot 1,Blk. 2, City

PENALTY

PAYMENT RECEIVED WHEN CERTIFIED ABOVE

TOTAL

W. S. CURLEE, ASSESSOR & COLLECTOR. By _____ DEPUTY

NOTE: All or 1st half due October 1st. Delinquent December 1st; 2nd half due April 1st. Delinquent May 31st; Penalty 12% per annum to be added thereafter.

The new tax bill described at left

Advantages of Complete System

The complete system permits the discovery of land and improvements now escaping taxation and eliminates double renditions and unknown ownerships. The city is provided with the following data: a record of real estate with the same legal description of land as used by the county in its tax records; a record of the name of the recorded legal owner, the volume and page numbers on which their deeds are recorded in the county public records, the date of and the consideration expressed in the instrument of conveyance; a record of lien holders, showing volume and page number, date of, and amount of lien; a record for all building permits, the date issued, and the estimated cost of construction, as well as all removal permits at the time of application; a record of the date of all fires, amount of loss, amount of insurance, and the insuror. It reduces to the minimum errors which usually occur in the old system and the necessity of checking to locate errors made in the old system. It permits the systemization of all work in the office and has made possible a 35 per cent reduction in the personnel, making the new system an economic measure as well as a decided improvement.

A Promise for Tomorrow

SOMETIMES—in this world gone war-mad—it is hard to believe that tomorrow will ever come.

But that men still dream of tomorrow is perhaps the thing which redeems today.

Therefore, we who have worked for better housing in the past, and even amid the chaos of the present, are glad that our program places us among those who work for tomorrow—molding the dream, shaping it, materializing it! For, in truth, tomorrow *will come*. And present wars will end. . . .

At present our minds, like the mass mind of America, are full of confusion. We think, for a moment, of the war—only the war. Then, suddenly, we remember that our job has linked up irrevocably with a longer fight—one which began before us and will continue after us—the fight of the human race for a better life. . . .

When you have housed a person in decency you have gone a long way toward aiding in the elimination of other inequalities which lie deeper than mere physical housing. You have, in many instances, pointed an entirely new way of life.

—From "Housing for Tomorrow," Annual Report of the Memphis Housing Authority.

The Philadelphia Housing Authority's Passyunk Homes furnishing accommodations for 1,000 families of Navy personnel.

A Housing Project Joins the Navy

EXACTLY 980 families — a total of 3,500 people—all connected with the U. S. Navy, are being housed in the new Passyunk project located in South Philadelphia. This is one of several such projects undertaken by the Philadelphia Housing Authority during recent years. Passyunk Homes is unique in that it devotes its entire facilities to Navy personnel or civilians associated with the Navy.

Passyunk came into being at the suggestion of Rear Admiral A. E. Watson, formerly Commandant of the Fourth Naval District. In 1940 he asked for 60 dwellings units in Tasker Homes, another housing project, to be used by married enlisted navy men. This need kept growing, as the war-clouds gathered, until it finally resulted in accommodations for 1,000 families instead of the original 60.

Passyunk covers an area of 59 acres. The living quarters for the 1,000 families are distributed in 131 buildings—121 in one-story, 760 in two-story, and 216 in three-story structures. They are divided into 168 three-room units, 580 four-room units, and 252 five-room units. A unit consists of a living room, kitchen, bathroom, and one, two, or three bedrooms.

Rents for these accommodations vary depending upon the classifications of the men. Civilian rents are from $25 to $35 per month. Rents for enlisted personnel, receiving allowances for quarters, range from $21 to $26 and for those not receiving allowances, from $11 to $15 per month. A uniform charge of $10 is added to cover the cost of heat, water, gas, and electricity.

The city of Philadelphia furnishes water for domestic use and fire protection. Water mains were laid subject to the inspection of the Bureau of Water of the city. Super deLavaud cast-iron pipe cement-lined with seal coat was used. Approximately 60,000 feet of terra-cotta pipe were used to furnish sewerage facilities. These connect with the city sewerage system.

The one and two-story houses are constructed of concrete cinder block faced with a sand-cement grout. The apartment buildings have a brick veneer and are backed with concrete cinder block. All have concrete foundations.

The buildings are excellently arranged. Approximately 20 per cent of the 58-acre area is covered by structures.

PHOTOGRAPHS BY U. S. PIPE AND FOUNDRY

Water lines were laid subject to the inspection of the Philadelphia Bureau of Water.

Babies and Real-Estate Values

By Cleveland Rodgers
Member, New York City Planning Commission

MOTHERS should be able to explain why blighted areas are being deserted and real estate depressed as people move from one section of the city to another. There is nothing mysterious about it. It is because mothers place the welfare of babies and children above all other considerations. For sound reasons the needs of babies and children—other than their own—should get more attention from realtors, bankers and business men generally. Practically every substantial investment in New York City real estate is predicated upon increasing, or at least on maintaining, the present total population. The city's tax system and internal economy generally are based on similar assumptions; yet vital statistics and other factors bearing on the stabilization of these values are given little serious thought.

It has been demonstrated by health and police records that slums breed disease and crime, discontent and other social ills. It has not been demonstrated that improved housing, in itself, will increase the birth rate, which is lower in neighborhoods where luxury apartments prevail than in the slums; certainly the amount of subsidized housing likely to be provided for the present generation cannot be depended upon to arrest the alarming decline in city births. Yet there is evidence that urban conditions are responsible for a dangerous decline in the birth rate.

What Mothers Most Want

With all the high-pressure salesmanship, the ingenuity and the deception practiced in catering to women, it is curious that so little effort has been made to give mothers what they most want: a feeling of security regarding the welfare of their children. There can be no security, only anxiety, for the mother whose young child is out of her sight in the more congested urban sections. Her fears for the child are as real as the dangers. There is only one way to get security for her young and to relieve her apprehension: this is to escape, by moving to a neighborhood where the child can play in safety; where the mother doesn't have to worry every moment her children are out of the house and doesn't become frantic when a child is late from school, when she hears the siren of an ambulance or sees a crowd of people gathered around a prostrate form in the street.

"New York Plans for the Future" is the title of a book by Commissioner Rodgers, to be published early in 1943 by Harper & Brothers, of which this article will form part of Chapter XIV.

Although the various chapters are devoted mainly to city planning problems, proposals, and achievements in the city of New York, The American City *is certain, from an examination of the advance proofs, that the book will be of interest and practical value to municipal officials and city planners in all parts of the United States.*

The relation between housing and profitable leisure might also be explored to advantage by realtors. As children grow older they stay indoors more. There is no place in the over-crowded dwelling for reading—or for games. There is no place for a young woman to entertain friends. Cupid's other name is Propinquity—read the addresses of those securing marriage licenses, which are published daily. Most marriages are between young people who live in the same house, the same block, the same neighborhood, or work in the same building. The kind of propinquity typical of the congested areas does not produce normal social life. For the good of all, women should have the widest possible choice in selecting mates. Old people, too, need privacy, a degree of quiet, sunlight and air.

These are all simple, normal requirements of wholesome family living—not extravagances or luxuries. They are mostly related to space and apply to neighborhoods in all parts of the city, and to apartments and tenements in almost all neighborhoods. The desire to enjoy an automobile may cause some families to move to outlying sections, but front yards, back yards, porches, light rooms, modern conveniences, the sight of trees and grass and flowers, the longing to get away from traffic and noise are determining factors in the minds of most families with children. Women usually make the decisions as to where families are to live and the sacrifices necessary to carry them out. This explains the courageous striking out by tens of thousands, following their better instincts, determined to get away from an abnormal existence and to give their off-spring a real chance in life. It is the simple story behind the growth of vast suburban areas; its motives and the moral should be equally clear.

Having lost hundreds of thousands of residents, the older areas are faced by the problem of how to induce people to return, or where to find new families to take the places of those who have deserted the blighted sections. That any appreciable part of the lost population can be persuaded to come back to the same, or worse, conditions is highly improbable. Those who have purchased homes cannot readily do so, even if they have the desire. The hordes of poor foreigners who once took the place of those who moved away are now stopped by the immigration laws. To be sure, the slums have found some new tenants. Economic and social

conditions elsewhere in the country and under our flag have caused tens of thousands to come to New York in the hope of bettering their lot. Some of the worst of the obsolete housing still yields profits collected from Negroes who find less prejudice against them in New York than elsewhere. These Negroes have not found the economic opportunities they seek, but this is a national problem which the city alone cannot solve.

The Biggest Urban Problem of All

Morals and sentiments aside, babies and more babies are needed if landowners, landlords, lending institutions and others who have a stake in the older sections are to arrest the declines in real-estate values and in business generally. The birth-control movement is, to a large extent, a revolt against bringing children into the world under such conditions as confront all but the fortunate few. The theories of Malthus are no longer accepted by economists. Increase in population, instead of pressing on subsistence, should increase production and wealth—at least in the United States. Problems of existence no longer revolve around production of necessities, other than shelter. The biggest urban problem of all is the production of babies, to end the strike against the bearing and rearing of children.

This can be done only by removing obstacles which, in congested areas, relate to incomes, shelter and the creation of better surroundings. An increase in births will not in itself solve the problem. Children must be *kept in the city* to be reared, and to raise other children, not be scattered over larger and larger suburban areas. The objections of many women to bearing and raising children is an earnest reflection of higher concepts of living, and of desires and aspirations which are creditable and reassuring. To ignore these factors is to disregard the dynamics of social behavior and their relation to modern economics.

The primary concern of the City Planning Commission, in both public and private housing, is to do what it can to assure orderly development which conforms to modern standards of coverage, densities, location, recreational and other facilities; to have new building avoid mistakes of the past which would create new slums in future. Not only the street pattern and physical layout but the criteria used in determining areas suitable for clearance and rehabilitation and standards to be applied to building should assure a new kind of community.

There is nothing grandiose about this kind of city planning. Some of the misconceptions regarding the objectives of the Planning Commission may be traced to Daniel H. Burnham's much quoted exhortation:

"Make no little plans; they have no magic to stir men's blood and probably themselves will not be realized. Make big plans; aim high in hope and work, remembering that a noble, logical diagram once recorded will never die, but long after we are gone will be a living thing, asserting itself with ever-growing insistency."

Needed—Not Only Big Plans, But Little Plans

Burnham's place in the history of American architecture and city planning has been made secure by such magnificent achievements as the amplification of L'Enfant's plan for Washington, where big plans in the classical tradition are most fitting and impressive. New York, also, must have big plans, in keeping with its size and importance. But the imperative need of the modern commercial and industrial city of New York is for some *little* plans, as well — for plans which will assure to the largest community in the nation localized amenities which can only come from the restoration of normal living conditions in residential areas.

Neighborhoods are the logical development units in city building. Their needs are calculable and can be readily related to budgetary resources. The school is a natural neighborhood center and the ordinary school district is about right as to area and population to form an average neighborhood unit. Libraries, hospitals, police and fire stations, health centers, retail stores and other features of the city are essentially local and have no other significance. Civic centers, great public institutions, express highways, large stores, and industrial plants belong in the larger city plan, but if the master plan is to have real influence it must mean something to everyone, and its purposes must be reflected in neighborhoods throughout the city.

The city of the future, if it is to meet the requirements of all the people, must be made up of a "coordinated aggregation of livable and workable neighborhoods."* These neighborhoods will, of course, vary as to area, size of population and shape. It is not feasible or desirable arbitrarily to divide the city into uniform squares or to impose rigid designs on neighborhoods. But it is desirable to establish standards as to open space, recreational facilities and other amenities applicable to all residential parts of New York. When this is done and the new city takes such form, every neighborhood should be found livable for people of all ages, regardless of incomes.

It has long been recognized that the destruction of neighborhoods, as such, has been the most serious detriment to city living. That a city, no matter how large, is still essentially a conglomerate of many small sectors, is fully apparent in New York. Yet a few developments, following the advent of the automobile and the truck, have destroyed the former unity and all but erased the former character and value of neighborhoods in the older parts of the city.

The disruption of neighborhoods began when automobiles turned the gridiron street system into a maelstrom of traffic, dangerous to life and limb and reduced the living cells to small single blocks. The only neighborhoods left in the older sections are those few areas where, because of the terrain or for some other reason, heavy traffic has been diverted. There people enjoy a little repose, and children may venture off their doorsteps without danger. With the construction of adequate highways and the removal from ordinary local streets

* Herbert U. Nelson, executive vice-president, National Association of Real Estate Boards.

of those uses which do not belong in them, restoration of the city neighborhood will be possible.

"Glimpses of the Great Democratic City of the Future"

Some of the public housing projects demonstrate such possibilities in the heart of the city. Glimpses of the great democratic city of the future, designed for living as well as working, are to be had by visiting Red Hook, Corlear's Hook, Queensbridge, East River Houses or any of the other public housing projects in New York. The architecture may not be impressive, and there are features which may not appeal to everyone, but note the child life, and the faces of the mothers! The children and mothers know a freedom of mind and movement denied those who live elsewhere in the city. Children living on Park Avenue or in other fashionable sections do not enjoy the playgrounds, the swimming pools, baseball diamonds and other facilities accorded the youngsters in many of these new living places. Housing and living conditions such as those found in public housing projects would never lead to revolts against city living, or against childbearing. There would be no "decentralization" problem, no decay at the core of the city, no depressed real estate in blighted areas if comparable dwellings and surroundings were available for the masses of people who can afford to pay reasonable rents in New York.

There would be poverty, as always, but no slums. We would not know, when we looked down a street, that we were in a "poor section." Children, rich and poor, would be in safe playgrounds. It would not be possible by looking at charts and maps to say "here are slums," as indicated by the records of street accidents, of juvenile delinquency, of infant mortality, the tuberculosis rate and the other black symbols which now denote slums as clearly on charts as they appear on the scene. A "poor section" would not be indicated by the height or bulk of buildings, since all would have ample air and space. It may come to pass that in all city neighborhoods there will be both rich and poor; that all will have plenty of sunshine and fresh air, regardless of other differences, and that balances will be struck within neighborhoods, instead of segregating people into groups based on incomes.

To Multiply Livable Neighborhoods

The mulplication of livable neighborhoods, where people of all ages and incomes may live amid wholesome surroundings, where adequate facilities for education and recreation are provided and more workers may live within reasonable distances of their places of employment, should be the primary objective of city planning in New York. Not only the health and morals of the next generation demand such environments. The status of individuals in a democracy makes it necessary to recreate cities on this pattern. Few people are greatly concerned about the city as a whole. Their blood may be stirred by big plans, but little plans may have an even greater appeal. The neighborhood is comprehensible to all; residents will band together and work for their neighborhoods. Citizenship can be revived and kept alive only on a neighborhood basis. Today many of the outstanding leaders in New York live in Westchester, Nassau and other suburban areas. Unless they can afford a town house or apartment they do not even vote in the city. There is leadership in the slums, but much of it is directed toward radical remedies for manifest social evils. For obvious reasons there is little civic pride in the blighted areas. We need many little plans, plans for neighborhoods which, when sufficiently multiplied, will change the entire city.

In the words of Sir Patrick Geddes, "Culture ever refuses to be completely concentrated." Museums, art galleries, opera houses and other cultural institutions must, in the nature of things, have more than local significance. But the real culture of the city should be found in its homes and be reflected in the neighborhoods where they are located. Vicarious living should give way to the actuality of participation. When this comes about there will be an "unearned increment" on human values. By relieving the needless stresses, and making normal living possible, individuals may become oriented in relation to their neighborhood and their city and conscious of their place in the nation and the world. The "masses" will be replaced by individuals as deeply rooted in their environment as the farmer on his acres or the residents of pleasant villages far from the present madding strains of urban living.

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Recent Trends in Local Government Debt

THANKS to Uncle Sam's substantial aid to state and local governments during the recent depression years, and to the fact that the states and their subdivisions are largely escaping the tremendous wartime burdens which the Federal Government has had to shoulder, the trend in public debt during the last decade has greatly favored the non-federal units.

In a report of the Bureau of the Census on "Government Debt in the United States: 1942," issued December 21, the total volume of state and local government debt outstanding as of June 30, 1942, is estimated at $19,643,000,000 compared with $19,563,000,000 in 1932. During the same period the federal debt jumped from $39,049,000,000 to $92,138,0000,000.

The $19,563,000,000 total of non-federal debt for 1942 represented a reduction of $540,000,000, or 2.7 per cent, during the preceding 12 months. The 1942 total included: state, $3,163,075,000; county, $1,846,183,000; municipal, $10,079,267,000; school district, $1,701,308,000; special district, $2,852,790,000.

The Census Bureau report comments on the fact that "public officials and citizens are generally cooperating in the nation-wide programs to combat inflation in the war period and to provide for economic readjustments in the post-war period. Important elements in these programs are the postponement of non-essential public works for the duration, acceleration of debt retirement, and accumulation of reserves for post-war construction."

Sao Paulo Rebuilds to a Plan

Factors in the Development of South America's Leading Industrial City

By FRANCIS J. VIOLICH*

LATIN American cities, generally far older than those of the United States, are undergoing modern development resulting in many striking contrasts and challenging problems. Brazil, which for a long time has been one of our most aggressive cooperators in the Good Neighbor Policy and now in the war, has the most interesting urban growth—much of it due to the war itself—for increasing industry and production at home because of the cutting off of sources of supply and markets abroad. United States cooperation and local initiative are also helping Brazilian cities to mature. Brazil's second largest city, Sao Paulo, with its million and a half people and its booming industry, leads all others in new urban life.

Sao Paulo's story reads like that of Chicago at the turn of the century because of its bustling industrial activity and its new building. Skyscrapers and broad boulevards, as well as problems of traffic, mushroom-growth, and blighted areas that have come with sudden expansion of industry and heavy immigration, make Sao Paulo the most North American city in South America. The aggressive way in which she is coping with these problems and rebuilding the city to a plan makes the Sao Paulo story an important one to city builders in the United States.

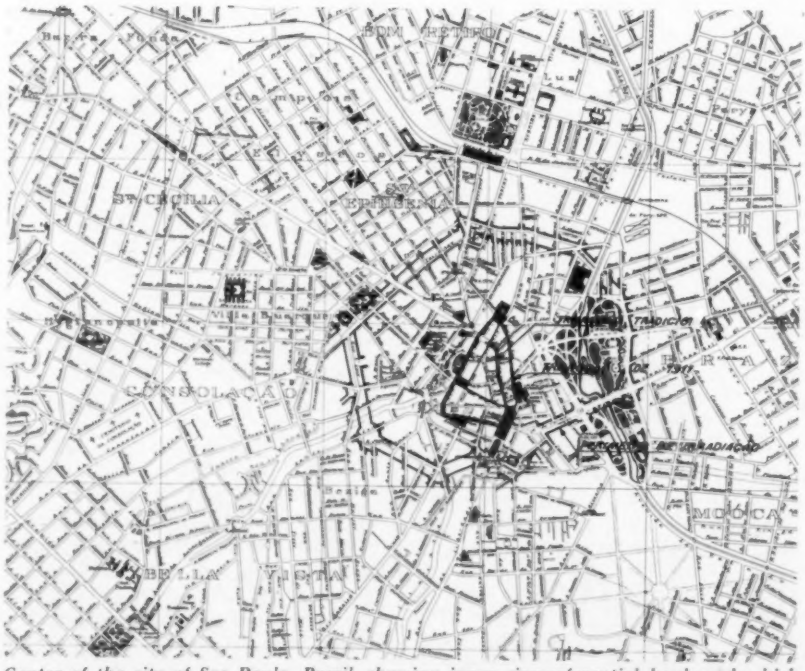
1555-1943

Founded in 1555 on a hilltop, for the purpose of Christianizing and subduing the Indian population, Sao Paulo remained an unimportant village for centuries until natural regional factors began to have an important influence on her development. Rich coffee land nearby gave impetus to Brazil's coffee industry; easy access to the excellent port of Santos 39 miles away on the sea made possible the shipment of coffee and other products out of the state of Sao Paulo; the excellent climate and high elevation —nearly 3,000 feet—made this city the center of the coffee and agricultural activity of this rich state of Sao Paulo.

In the last 20 years Sao Paulo has begun to shift from an agricultural to an industrial base for two reasons: first, the large immigration of industrious and aggressive Europeans before and after the last war, and second, the establishment of cheap electrical power by the building of the dams forming Lake Guarapiranga in 1928, and the Reservoir Rio Grande a few years later. Each of these dams backs up some 30 miles of streams that originally flowed inland to the Parana. Turbines located at the foot of a 2,160 foot drop can generate 1,000,000 horse power, three times the present consumption.

Inter-American Cooperation

Sao Paulo's program of modernization and reorganization of her civic facilities into an efficient and attractive scheme stands as an example of what there is to be gained for city planners and city builders in the United States by closer contact and cooperation with South American technicians. Such interchange will at the same time make available to the Latins certain techniques in which we excel, such as zoning, building laws, sanitation, and housing. Mutual benefits will be the result of the inter-American cooperation in technical fields that is going on during the war and which will go far after the war to assist both North and South American technicians to replan and rebuild better cities.



Center of the city of Sao Paulo, Brazil, showing inner circumferential boulevard which encircles the heart of the central business and financial district.

* The author of this article recently completed a 10-months' survey of planning and housing in Latin America for the Columbia Foundation, of San Francisco. Readers will recall Mr. Violich's previous article, "The New Capital of a Brazilian State," in the November 1942 issue of this magazine.

Part of the interlacing system of radial parkways and viaducts in the center of Sao Paulo. The large building in the center foreground is being removed to extend boulevard units recently completed.

The result has been tremendous industrialization, making Sao Paulo South America's leading industrial city. Spinning and weaving, tanning, machinery, lumber, ceramics, clothing, footwear, building and construction materials are some of the industries of Sao Paulo. Industrial power consumption increased 20 per cent last year; 11 per cent the year before. The government has under way a $1,000,000 industrial trade school to help provide for future trained personnel. The rate of growth of the city in population has been 4 per cent per year for the last few years and, although the building rate has fallen off recently, 1941 saw an average of 33 buildings of various types go up each day. Most of the construction was in residential work in the very spacious and American-like suburbs of Jardim America, Paecembu, and others.

A Mayor Who Is a Planner

Having developed very rapidly through hard work, the city is now turning some of its wealth and energy toward making the city a more attractive and efficient place in which to live and work. The planning program is largely in the hands of a brilliant and aggressive engineer, who is none other than the mayor himself—Mayor Prestes Maia of Sao Paulo. Some 20 years ago, while working for the city as an engineer, he became interested in city planning, made a complete study of the needs and problems of the city, and published a comprehensive report in 1930. This outline for the replanning of Sao Paulo has been the guide and inspiration for the tremendous rebuilding program which the city has under way. The development of the plan became a fact when Prestes Maia became mayor. His main interest and energy are devoted to the carrying out of the plan which will make Sao Paulo one of the finest cities of the Americas.

Prestes Maia's plan is detailed and far-reaching. Most of the attention is now being concentrated on the circulation system, based on inner and outer circumferential and a number of radial boulevards. The inner "ringstrasse" will be a parked boulevard varying from 120 to 180 feet in width encircling the heart of the central business and financial district, where high land costs prevented cutting straight through. This ring-parkway is well under way, complete in some portions, and with land already expropriated and purchased in others. The second circumferential boulevard will follow the outer edge of the residential fringe of the city, where land is already being acquired as subdivision goes on. In addition to these two parkways, radials are being built to make ac-

The double-tube tunnel leading to new residential areas

cess to them possible. The radials follow the low-level grade of old drainage channels which had been built up and blighted due to inaccessibility, while great viaducts are being built as natural overpasses and grade separators for traffic.

Parkways, Viaducts, Terminal, Tunnel

This system of interlacing parkways and viaducts, as it develops, is becoming a characteristic feature of Sao Paulo which will serve to link a number of existing parks close to the downtown area—Parque Dom Pedro II and the Praca da Republica. Residential areas have been made accessible by the building of a double-tube tunnel under one of the larger hills of the city. These areas have been built according to the highest American and English standards by an English company known as Companhia City.

Another important part of the plan is the channelization of the Rio Tiete, whose meandering course will be shortened from 28 to 16 miles in order to prevent frequent flooding. Rail lines which now cut through the city causing traffic difficulties will be placed along the banks of the new channel. Three railroad stations will be combined and a central rail terminal built on new land formed by reclamation along the banks of the river. Nearby will be built a new airport.

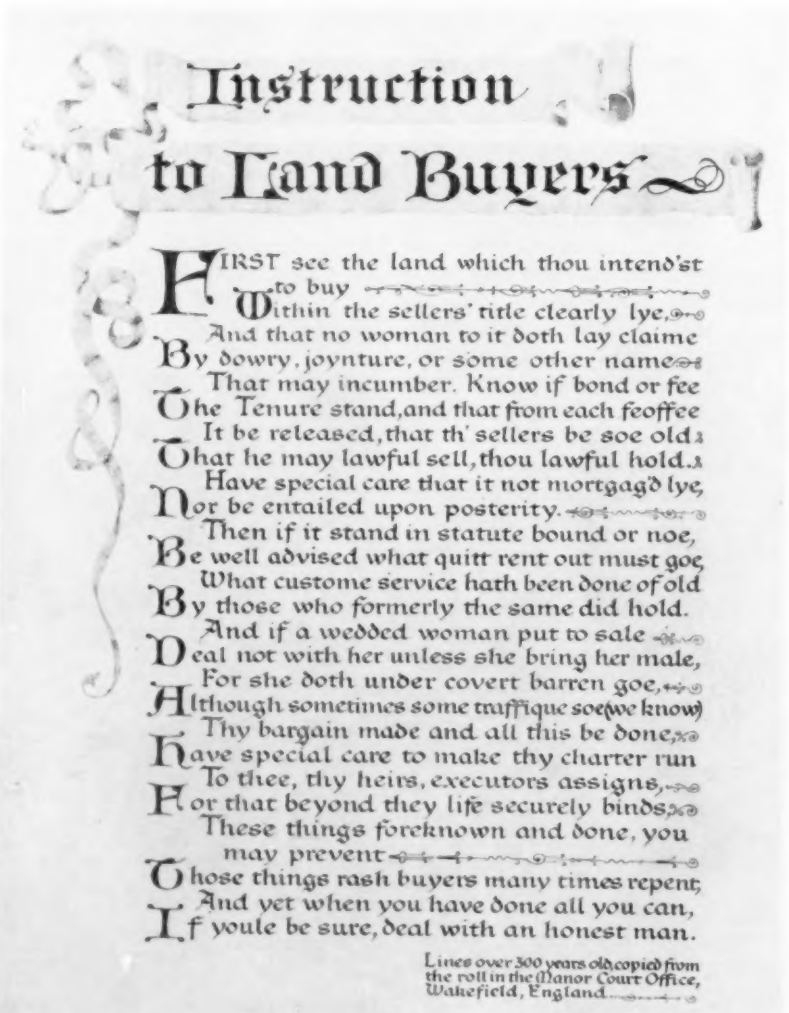
The suburbs of Sao Paulo are gradually extending into the open, rolling countryside nearby. One subdivision company has built a splendid divided highway through the open country to the edge of Lake Guarapiranga and has under construction beside the lake a satellite garden city known as Interlagos. The first unit for some 6,000 people is now complete with streets, parks, beach, and boating facilities. Interlagos is a remarkable job of modern subdivision planning.

Tackling the Housing Problem

As in the case of New York, industrial expansion plus large European immigration has left Sao Paulo with a problem of substandard housing for low income groups. About one third of the people of the city still live in either "corticos" or "vilas," the two housing types which were constructed at the time of immigration from about 1903 to 1912. Wages in Sao Paulo are high enough to make possible the financing of something better, so that low-income housing facilities are next in line for modernization. The IAPI, social security agency for 3,000,000 industrial workers in Brazil, is planning a project for 3,500 families for Sao Paulo which will establish the beginning of a new housing standard for the city.

Paulistas are aggressive and active. A citizen's group known as IDORT, which when translated means the Institute for the Rational Organization of Work, has done a good deal to advance good principles of civic development. Each year a "Jornada" or week's conference is held to discuss some particular problem; subjects have been housing, transportation, food, and distribution. The housing problem is also under study by the city's Department of Social Documentation, which is completing a housing survey and has done an excellent film on Sao Paulo's housing needs.

Sound Advice—Three Centuries Old


Instruction
to Land Buyers
FIRST see the land which thou intend'st to buy
Within the sellers' title clearly lye,
And that no woman to it doth lay claime
By dowry, joynture, or some other name
That may incumber. Know if bond or fee
The Tenure stand, and that from each feoffee
It be released, that th' sellers be soe old:
That he may lawful sell, thou lawful hold.
Have special care that it not mortgag'd lye,
Nor be entailed upon posterity.
Then if it stand in statute bound or noe,
Be well advised what quitt rent out must goe,
What custome service hath been done of old
By those who formerly the same did hold.
And if a wedded woman put to sale
Deal not with her unless she bring her male,
For she doth under covert barren goe,
Although sometimes some traffique soe we know)
Thy bargain made and all this be done,
Have special care to make thy charter run
To thee, thy heirs, executors assigns,
For that beyond they life securely binds,
These things foreknown and done, you may prevent
Those things rash buyers many times repent;
And yet when you have done all you can,
If youle be sure, deal with an honest man.
Lines over 300 years old, copied from the roll in the Manor Court Office, Wakefield, England

Reproduced, by permission, from the "Season's Greetings" of the real estate firm of Walter & Samuels, Inc., New York

Installment No. 3 of a Monthly Department of Ideas, Old and New, for Public Speakers and Report Writers.

Did Goethe Foresee Hitler?

"Thou hast it destroyed,
The beautiful world,
With powerful fist:
In ruin 'tis hurled
By the blow of a demigod shattered!
The scattered
Fragments into the void we carry,
Deploring
The beauty perished beyond restoring.
Mightier
For the children of men,
Brightlier
Build it again,
In thine own bosom build it anew!
Bid the new career commence,
With clearer sense,
And the new songs of cheer
Be sung thereto!"

GOETHE
—From "Faust" (Bayard Taylor translation)

" "

With reasonable men, I will reason: with humane men I will plead; but to tyrants I will give no quarter, nor waste arguments where they will certainly be lost.—WILLIAM LLOYD GARRISON

" "

Building on Ideas

The wise know that foolish legislation is a rope of sand, which perishes in the twisting; that the State must follow and not lead the character and progress of the citizen: that the strongest usurper is quickly got rid of. *Only they who build on Ideas build for eternity.* The form of government which prevails is the expression of what cultivation exists in the population which permits it.

RALPH WALDO EMERSON
Politics

" "

Public life is a situation of power and energy; he trespasses against his duty who sleeps upon his watch, as well as he that goes over to the enemy.—EDMUND BURKE

" "

A 16th Century Prophecy

Carriages without horses shall go,
And accidents fill the world with woe.

Around the world thoughts shall fly
In the twinkling of an eye.

Under water men shall walk,
Shall ride, shall sleep, and talk;
In the air men shall be seen
In white, in black, and in green.

Iron in the water shall float
As easy as a wooden boat.

MARTHA ("MOTHER") SHIPTON

" "

Burst water mains are much easier to deal with than injured feelings.—JAN STRUTHER ("Mrs. Miniver")

Public Service Endures

One of the greatest satisfactions in doing any sound work for an institution, a town, or a city, or for the nation, is that good work done for the public lasts, endures through generations, and the little bit of work that any individual of the passing generation is enabled to do gains through association with such collective activities an immortality of its own.

CHARLES W. ELIOT

" "

Democracy's Task

When the moment of exigency is past, all our efforts, all our means, all our resources must be exerted to the utmost not to maintain a great permanent military defense but to set about the healing of those nations where democracy is now impossible. The task of the democratic peoples, if they wish to make their own democracy secure, is to provide for other peoples those conditions which they consider essential for themselves.

PEARL S. BUCK

" "

The Really Rich

That country is the richest which nourishes the greatest number of noble and happy human beings; that man is richest who, having perfected the functions of his own life to the utmost, has also the widest helpful influence, both personal, and by means of his possessions, over the lives of others.

JOHN RUSKIN
(Unto This Last)

" "

Definitions Not in the Dictionary

Economist—An expert who tells you what to do with your money after you have done something else with it.

Procrastination—The art of keeping up with yesterday.—DON MARQUIS

Dignity consists not in possessing honors, but in deserving them.—ARISTOTLE

Intelligence appears to be the thing that enables a man to get along without education. *Education* appears to be the thing that enables a man to get along without the use of his intelligence.—ALBERT EDWARD WIGGAM

Red—An invidious adjective applied to individuals and ideas to the left of the man who uses it.—*Common Sense Magazine*

Theorist—One who thinks he knows where he wants to go, but does not know how to get there; as contrasted with a *Practical Man*, who gets there—and then finds he is in the wrong place.

Justice—Truth in action.—BENJAMIN DISRAELI

In Lighter Vein

Statesmanship should quickly learn the lesson of biology, as stated by Conklin, that "Wooden legs are not inherited, but wooden heads are."

ALBERT EDWARD WIGGAM
(The New Decalogue of Science)

" "

"Time, time," said old King Tut,
"Is something I ain't got anything but."

DON MARQUIS

" "

It isn't so much people's ignorance that does the harm as their knowing so many things that aint so.—ARTEMUS WARD.

" "

If all economists were laid end to end, they would not reach a conclusion.—GEORGE BERNARD SHAW.

" "

An ideology is too often nothing more than an emotional attachment to a noise.—STUART CHASE.

The File Clerk

A sheepskin "cum laude" looks down from his wall,
On his chain is a Phi Beta key;
But his troubles are done, for a CAF-1*
Displaces his batchelor's degree.

He has read all the history man has compiled,
From the poleolithic age down,
But he now spends his day with an endless array
Of Johnson and Thompson and Brown.

He's familiar with Shelley and well versed in Keats,
Quotes pages of Shakespeare and Pope,
And Kipling beguiles all his time as he files
Hood between Holly and Hope.

He has dabbled with drama and mused upon art
And tracked down the Nth root of N;
And often has toyed with volumes of Freud
On the psychoneuroses of man.

He has weighed an electron and measured a volt,
And ponders with serious mien
On the wave length of Hertz as he deftly inserts
Greenberg 'twixt Greeley and Greene.

So he files them away for $1,260 pay,
Determined that he isn't through,
He is working, you see, for a master's degree,
That he may be a CAF-2.

—Reprinted, by permission, from *The Chief*—The Civil Employees, Weekly, New York ("CAF-1," in the first stanza, is an abbreviation of the civil service term, "Clerical Administrative Fiscal.")

CHICAGO PARK DISTRICT PHOTOGRAPH

Children with vegetables gathered from the largest victory garden in Chicago where there were 103 family garden plots.

Victory Gardens in Cities and Suburban Areas

Aid Needed from Municipal Governments and Local Organizations

By M. L. Wilson

Director of Extension Work, U. S. Department of Agriculture; and Assistant Director, Office of Defense Health and Welfare Services, in Charge of Nutrition

VICTORY gardens have become an essential part of the nation's wartime food program. A victory garden, properly planned and cared for, is an asset for any family. A community garden project which is intelligently planned, organized, and supported can pay large dividends in better nutrition and better health among our citizens.

An interesting observation about the history of victory gardens is that the movement was almost spontaneous from the start. In the fall of 1941 there was considerable demand for a defense-garden program; many people evidently remembered the war gardens of the first world war. Before the enemy struck at Pearl Harbor, Secretary of Agriculture Claude R. Wickard and Federal Security Administrator Paul V. McNutt had issued invitations to leading seedsmen, horticultural associations, agricultural and horticultural experts, garden clubs, educational institutions, farm, civic, and community leaders for a national conference on gardens. After that the victory garden idea met with almost universal response from a war-minded American public. There were an estimated 15,000,000 victory gardens in 1942. Of these, 10,000,000 were urban or nonfarm.

A National Advisory Garden Committee was named, with Governor Prentice Cooper of Tennessee at its head. This committee laid down the broad general recommendations followed in 1942, and to be followed again in 1943. A Victory Garden Committee in the United States Department of Agriculture, with H. W. Hochbaum as chairman, is cooperating closely with Governor Cooper's committee in correlating the victory garden activity with Secretary Wickard's 1943 food-production program.

Although stimulation is given to victory gardens through publicity and support by national magazines, organizations, and public agencies, the program is primarily a state and local wartime activity. As such, it becomes even more important in 1943 than it was in 1942.

Food Requirements That Must Be Met

To meet the requirements of our armed forces and the people in allied countries, Secretary Wickard has announced that probably one-fifth of our total food production must be set aside for military use and food needs abroad. Particular emphasis is placed on certain foods which can be grown easily in the home garden. For instance, the dehydrated-vegetable goal for next year has been set at 100,000,000 pounds. Most of this, however, has already been earmarked for military and lend-lease purposes. Many vegetables and fruits that are out of season in a particular locality may disappear entirely from store shelves before the end of summer. One-half of the nation's total pack of commercial vegetables is expected to go to the armed forces or to lend-lease.

We can readily see that, under normal conditions, such a demand would be hard for farmers to meet. Wartime necessity has brought about additional complications to the average farm operation. Farmers have suffered curtailment of farm, truck, and garden labor; fertilizers; spray materials; farm machinery; packing materials; transportation facilities; and many other items.

The increased demand on the nation's farms makes it desirable that more suburban lots and suitable ground within city limits be turned into home gardens. Municipal governments and local administrators can do a great deal to aid and stimulate properly guided gardening activities. As is the case with any project a city or suburb may undertake, intelligent planning and a good deal of education are necessary to make a success of victory gardening, either as an individual or a community project.

In many communities there are garden clubs and like organizations or, perhaps, local newspapers or similar public-service institutions, any of which may be only too glad to assume leadership in stimulating the garden program. Their efforts can be considerably enhanced by the cooperative participation of the city and local government through institutions such as the educational system, city health service, and park service. Some locations in public park areas can serve as victory garden demonstration plots and be both an inspiration and a guide to gardening for local inhabitants.

Cautions as to the City Garden Program

There are some broad matters of caution to be considered in every city garden program. The idea will naturally appeal to many persons. But all ground is not suitable for a good garden. The public should be discouraged from trying to plant fruits and vegetables where they have no chance, and from starting a garden where no one in the family has the time to take care of the garden properly during the growing season which, in many sections, lasts from early spring till late fall and early winter.

In planning the local victory garden program, considerable emphasis must be given to climate, soil, and other conditions that differ considerably from state to state, and from one community to another. State victory garden councils, consisting of representatives of interested groups, have been recommended by the National Advisory Garden Committee. These state councils will work closely with the state extension services and land-grant colleges in shaping up the technical recommendations for garden programs in different sections of the state. Most counties have an agricultural extension agent who will be available for local consultation. Also many cities have on their staffs landscape gardeners who, with local seed supply houses, nurseries, garden clubs, and horticultural associations, furnish excellent sources of volunteer personnel for formulating local advisory groups.

The Agricultural College of the University of Illinois has already announced a series of 11 district training schools to be held during January and February in different sections of the state. They were arranged by the State Victory Garden Committee in cooperation with the extension service. These schools were designed primarily for city gardeners and their leaders and are in addition to the farm-garden campaign for the state. The plan

A victory garden as a wartime activity has a great popular appeal. It stands in the front ranks of war programs and offers a real opportunity for service. State and local defense councils, extension agents, nutrition committees, and other existing machinery stand ready to aid city and suburban governments in making plans for a sound 1943 victory garden program. Leaflets on victory gardens are available through the Office of Information, United States Department of Agriculture.

CHICAGO PARK DISTRICT PHOTOGRAPH

A victory garden in an apartment-house section of Chicago. A special plot under the flag is reserved for children. Most of the families participating have never before grown food plants.

Model Victory Demonstration Garden, Frederick County, Md.

adopted by Illinois will no doubt be carried on in a majority of states.

Recommendations for 1943

In its recommendations for 1943, the National Advisory Garden Committee emphasizes the following points:

This program should be advanced in closest cooperation with the state and county nutrition committees, and should constantly stress the health angle in urging:

(a) For every farm a vegetable and fruit garden sufficient to meet the household's yearly needs

(b) *For every suburban and town home where there is sufficient open sunny space and fertile ground, a vegetable garden,* and (if possible) fruit garden

(c) For every home owner without such favorable conditions, opportunity to cultivate part of a conveniently accessible community garden

(d) The growing in home gardens of leafy green vegetables, yellow vegetables, tomatoes especially, and all the more easily grown protective foods; these to be used fresh, and any surplus to be processed for winter use.

Even though individual families may not need all the vegetables and fruits they can grow on their victory garden plots, properly organized community efforts can encourage the conservation of fruits and vegetables. Projects like these proved successful in some areas in 1942. In Philadelphia, for instance, an organization known as Food Conservation, Incorporated, was organized for the purpose of canning and preserving surplus fruits and vegetables from suburban gardens. Where such a program is undertaken as a community project, however, *local health authorities will want to make sure that canning and conservation are in responsible hands.* Food grown and conserved in this way can be a real contribution toward maintaining a sound standard of nutrition. Such food can be used for school lunches and for distribution among people whose wartime diet is otherwise below the standards for good health.

EDITORIAL NOTE.—The Victory Garden Department of the Chicago Metropolitan Area, OCD, in a report issued December 15, gives the following figures for 1942 accomplishments in that area:

Within City . . . 12,601 gardens, 290 acres
Suburbs . . . . 13,925 gardens, 653 acres

"Shacktown" Developments Prevented by California Ordinances

CALIFORNIA cities and counties are using two types of ordinances to prevent trailer camps and auto courts from degenerating into "shacktowns," the American Society of Planning Officials reports.

The homes-on-wheels, which shelter many war workers and migrant crop pickers, must come up to certain standards in at least 25 cities and 8 counties of the state which have adopted the "model" ordinances, prepared by the State Division of Immigration and Housing. Other municipalities have adopted variations of the models.

The model ordinance controlling trailer camps and tent spaces in incorporated cities was first adopted by Banning, in 1936, and later by Santa Ana, Marysville, Vallejo and other cities. To control unincorporated areas, an ordinance regulating auto and house courts and camp spaces and prohibiting squatter camps has been adopted by the 8 counties mentioned, including Ventura, Santa Barbara, and San Luis Obispo, just north of Los Angeles.

Features of the Ordinances

In cities the planning commission —or if there is none, the building or health department—must approve the location of a trailer camp site after public hearings, and the city council grants the application for permit. House trailers must be 8 feet apart, and 8 feet from any lot line, the grounds kept drained, sanitary and lighted, and water supply from faucets provided. Trailers must not be fixed permanently to the ground. Separate toilet facilities for men and women are specified, one to every 10 tents, camp cars or trailers, along with bathing facilities and hot and cold water. Refuse and sewage-disposal facilities must be provided.

The model ordinance for *unincorporated areas* puts the duty of enforcement on the county health department. Among requirements, the ordinance specifies that partitions between cooking and sleeping rooms in any house court building be full length, and that all cooking rooms be equipped with running water. Minimum air space, room size, and windows are specified, and no habitation is to be constructed of "sacks, rags, bush cans, weeds, or refuse material."

State health and safety code regulations on auto courts and trailer camps in unincorporated areas, and parts of the state housing act applicable to courts and camps in incorporated cities, also have aided in keeping down shacktowns, according to the Division of Immigration and Housing.

More About . . . Fly Ash

For Municipal Incinerators

By Henry W. Taylor

IN December we studied the problem of fly-ash control broadly, giving pointers on what operators may do to control this nuisance. This month, let us look at what was actually done in one community where fly ash threatened to be troublesome.

Plant Description

This town actually has a smooth-running little incinerator. It has two single-cell 30-ton furnaces served by a double-sized breeching and chimney. It is strategically located and shows that a good deal of thought went into both the yard layout and the method of handling the refuse. The extra-sized breeching and chimney were designed to accommodate future expansion of the plant and avoid the necessity of an extra stack. Two single cells were used in place of a double-cell unit to provide flexibility of operation—a very desirable feature in this particular community. This arrangement provided the opportunity for the repair of one unit while the other carried the load.

Fly-ash control here was more than just highly desirable—it was, in contrast, an "absolute must." In the first place, the community has a high degree of civic pride and does not tolerate inefficiency in any of its departments. Furthermore, the plant was located in a wooded area in the exact center of town where, if any fly ash developed, the operators could expect an immediated response from angry householders.

The draft that developed from this oversized breeching proved to be far greater than had been expected. The designer had anticipated the need for its control and had installed a baffle in the breeching. However, deposits of fly ash occurred beyond this baffle, indicating that the velocity had not yet been controlled sufficiently. The character of the refuse aggravated this condition because it contained no domestic ash, was unusually light, and included a high percentage of readily combustible matter.

A study of fly-ash control at a particular municipal incinerator gives a practical demonstration of the way the studies must be made. In this case an oversized chimney contributed most of the difficulty.

Corrective Measures

The first corrective measure attempted, after damper control and operation changes had proved to be inadequate, was to install a steel plate on the top of the chimney, reducing the opening. Although this proved at once beneficial, fly ash still was deposited beyond the breeching, demonstrating incomplete fly-ash interception.

The next corrective measure was the baffling of gas flow prior to the main breeching and chimney. This was done by the trial and error method, and only the final layout need be mentioned. Curb baffles 12 inches high were installed under the combustion chamber baffle walls. These produced a marked increase in fly-ash deposit not only against the curbs but also in all corners between the floors and walls. Other baffles were placed in the manifold, one at the side of the outlet of each unit, with low curbs beyond, and one at the end of the manifold.

The original design provided for ample flow capacities at all points, and slight constrictions could be added without cutting down flow areas or cubic foot capacities to an unwarranted extent. As a matter of fact, the increase of velocities at the baffle in the combustion chamber proved an asset because of characteristics in the pre-heater chamber. The constriction of gas flow in an existing furnace by the addition of curbs and pockets must be applied with caution and should not result in a new gas flow velocity of over 35 feet per second.

The problem of fly ash was thus solved by three corrective measures: first by blanking off a portion of the chimney; next by a combination of baffles and curbs; and finally by careful operating methods.

Studies Required

Obviously a situation of this type is not simple. It involves so many different factors that an immediate solution is seldom reached. In this case, the factors developed into providing an adequate air supply for a highly combustible refuse, the supplying of additional pockets for ash collection, and the study of the refuse characteristics and methods of stoking.

The merits of the oversized chimney and breeching—in this case, undoubtedly the chief offender in the fly-ash nuisance—are an open question. This particular case presents an extreme instance of the problems which have been encountered elsewhere. The excess capacity of the chimney was not the sole cause of the difficulty, but it played an important part. When such a chimney is installed, it may prove expedient to provide a damper in the main breeching.

The case also serves to illustrate the necessity for extended trial runs and for a study of operation before a plant can be safely turned over to the owner for normal use.

Next month, main-line meters, their application, and value will be discussed.

Something New in Water Storage

Structural Developments Using Timber Connectors Save One-third the Steel and One-half the Lumber Required for Emergency Water Storage Construction

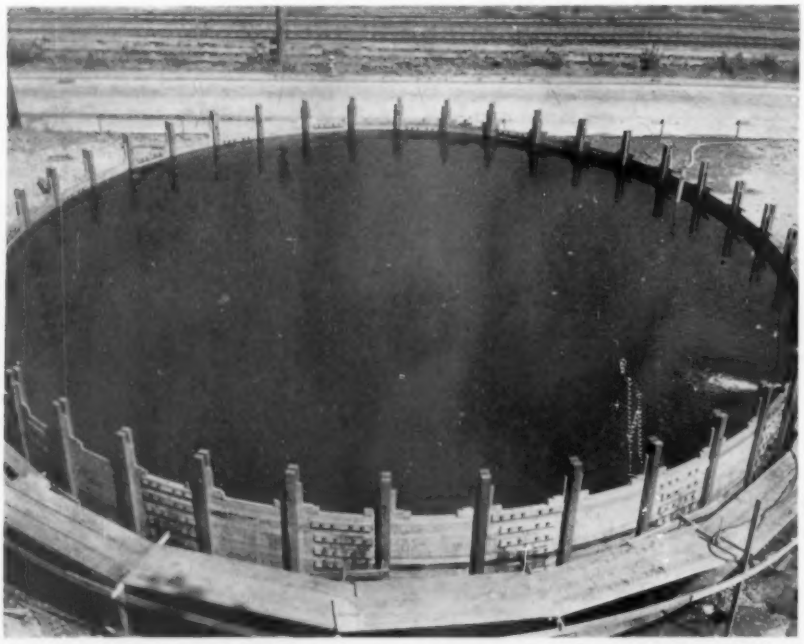
THE war has given birth to a new type of water-storage tank that should receive the attention of municipal officials. This is a wood tank constructed according to a revolutionary design that makes the wood not only confine the water but also carry the load. In all previous designs, the load has been carried by steel bands that held the sides of the tank together.

This type of tank was constructed as an experiment in Tacoma, Wash., by the Texas Company. Harry R. Powell, former Seattle structural engineer, now with the U. S. Army, was asked by this company to design a tank which would use a minimum amount of steel. He saw an opportunity for wood to enter a new field and followed through. Taking his design to the Henry Mill and Timber Co., Tacoma, he got immediate cooperation from the owners and from Charles Dearstyne, engineer. They agreed to build an experimental tank 60 feet in diameter and 9 feet in depth to hold 200,000 gallons.

To make the wood serve structurally as well as hydraulically, the engineer used tongue-and-groove members laid horizontally and bent around the tank to act as tension bands, joining these wood bands with Teco ring connectors and wood splice plates.

Construction

The lumber was clear Douglas fir, selected from stock at the mill and not affected by the lumber freeze order. The stock was air-dried to approximately 18 per cent moisture content. The circular pieces were made from 2x6 lumber 20 feet long, surfaced and tongue-and-grooved; vertical stiffeners were 4x6's. All lumber was prefabricated at the mill. The work at the site was performed by one carpenter and a few common laborers.



In this new type of construction, the lumber not only confines the water but also carries the load, eliminating the use of critical steel bands. Engineers who have examined the tank see possibilities for water storage and also for digestion tanks in sewage-treatment plants.

The first step was the construction of a concrete base poured with anchors for stiffeners and grooves for connection between tank walls and base. The inside vertical stiffeners were then placed, and the horizontal staves forming the tank wall were bent around and clamped to the stiffeners. Connections between the planks were made with 1-inch scabs, ½-inch blots, and 2½-inch split rings, the number of rings varying with the depth of the tank and subsequent pressure. As each band was completed, it was unclamped from the stiffeners and wedged against the next lower band. Finally, when all the bands were in place, the outside vertical stiffeners were placed, and the inside bottom joint was caulked by pouring melted AMPCO into the joint. The outside joint was grouted with one-to-one cement-sand mixture hammered into place.

The tank was partially filled with no precautions against leakage, and showed only a nominal loss. Professor B. L. Grondal, Professor of Forestry, Washington State University, who was witnessing the experiment, suggested wetting the sides down for a day or two. This was done, and when the tank was again filled there was little leakage noted. Professor Grondahl states that this precaution should be taken with any wood tank that is filled slowly because of the great differential expansion of the wood. After the initial wetting, the tank will give excellent service even though it may be periodically empty, he reports.

Saves Material

The tank meets its design requirements. It is low in required materials, simple to construct, and is adaptable to large-capacity stor-

age. Comparing it with the standard steel-band wood tank, it requires about one-third the steel and only half the lumber for similar storage capacities, according to Mr. Powell.

Engineers and professors from the University of Washington, who inspected it after filling, believe it is the answer to the wide demand of municipalities for huge storage tanks constructed with a minimum use of steel. Ground storage, strategically located in tanks such as these would relieve pumping loads in cities having increased water demands. Covers, Capt. Powell points out, may be constructed in accordance with a number of suitable designs.

Storage and Feeders

According to Professor Grondal, there is no reason why this type of tank could not be used as a digestion tank in a sewage-treatment plant, provided the wood were properly treated with coal tar creosote. In his opinion such a creosoting tank could be regarded as a permanent structure.

According to Capt. Powell, this design was made possible by the use of Teco ring connectors developed by the Timber Engineering Co., Washington, D. C. This company, a subsidiary of the National Lumber Manufacturers' Assn., will furnish typical designs of modern wood tanks with capacities from 2,000 to 100,000 gallons to any practical engineer or municipal official.

For Bicycle Safety

Kansas City's police department is in the bicycle painting business to reduce casualties from bike-auto collisions at night. After tests made by the Missouri city's police showed that white paint increases a bicycle's visibility, the department offered to put a coat of white paint on any or all the city's bicycles free of charge. There are 40,000 bicycles in the city.

Community Betterment Contest Brings Many Practical Suggestions

BELIEVING that the average citizen has some very worthwhile suggestions about the improvement of his city, *The Milwaukee Journal*, in cooperation with the City Club of Milwaukee, recently staged a "Program of Work" contest in which more than 2,500 Milwaukeeans participated. The question of the contest was: *"What would you do to make Milwaukee (City or County) a better place in which to live?"*

There were 36 prizes ranging from $100 down to $1. The replies were varied and offered many suggestions for future consideration. The ideas suggested are summarized in some detail in a pamphlet published by The Journal Company, Milwaukee.

In judging, the entries were divided into seven general classifications as follows:

	Entries
Safety and Health	853
Public Works	588
Education and Recreation	464
Social Welfare	366
Finance	131
Government Structure	114
Business Promotion	71
Total	2,587

The winning entry suggested the substitution of civil service for election for the positions of city treasurer, county treasurer, city controller, county clerk, county recorder of deeds, county superintendent of schools, and similar offices.

Many of the replies stated that citizens would like to see better smoke and odor control in Milwaukee. Diesels for switch engines were suggested. One person suggested better safety education of pedestrians to cut down accidents and said a pedestrian safety school might be established.

Slum clearance, better parking facilities, a coordinated lake-front plan, more wide streets, and a streamlined governmental structure were also advocated. It was also suggested to educate Milwaukeeans concerning their government by a series of movies and radio broadcasts.

The City Club of Milwaukee has been advocating reorganization of city and county governments in recent years and has a plan outlined for this project, and the Club received many valuable suggestions in the contest.

JOHN E. HUBEL.

Transit Journal Suspends

AFTER 58 years of leadership in its field, *Transit Journal* announces that, effective with the December 1942 issue, it is suspending publication. As stated in that issue:

"The Journal has weathered many trying periods. Under the name *Street Railway Journal* it ably served the operators of horse cars. When the electric street car came into being the name was changed to *Electric Railway Journal* and it devoted itself to the vigorous promotion of that advanced form of transportation which brought a new age of speed and convenience to the public and an era of great prosperity to the industry. Then, in the 1920's, began the transition from rail to rubber. This transition brought with it many fundamental changes which have made the publishing of the Journal more and more difficult. Far from being profitable, this publishing service was continued at a loss in the hope that conditions would improve.

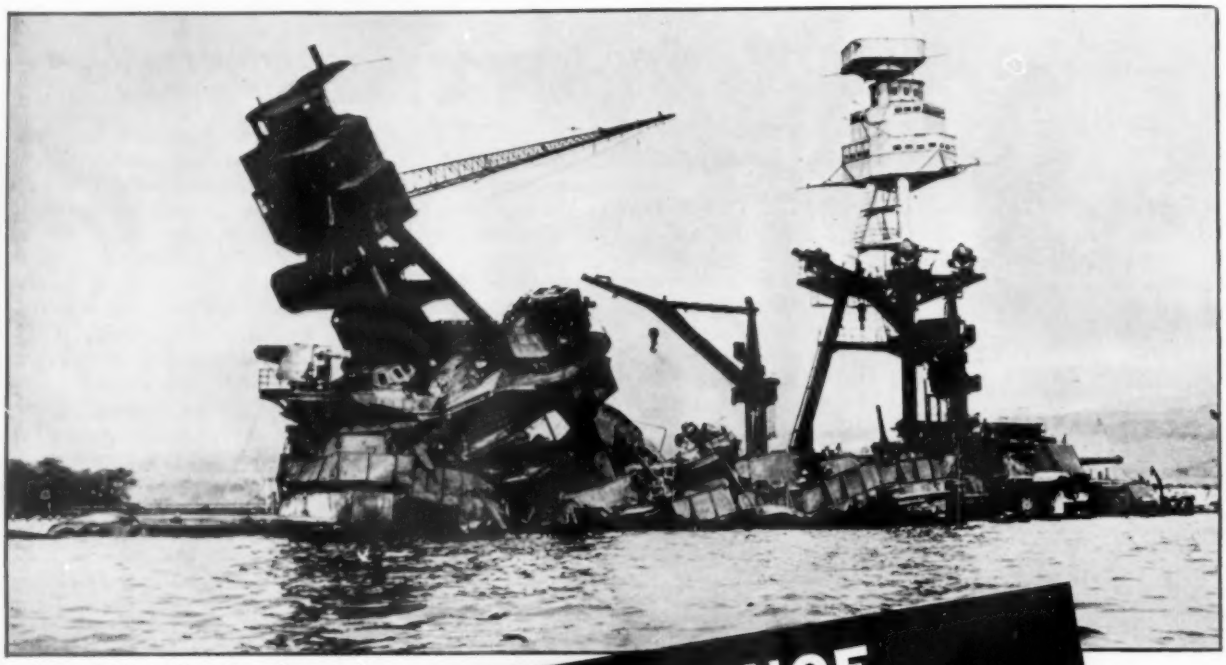
"Today, with war conditions further confusing and intensifying not only the present but the long term publishing outlook, it becomes impossible to justify steadily mounting losses."

THE AMERICAN CITY mourns the passing of a highly esteemed contemporary, and will strive to fill the gap in some measure by the attention that this magazine will continue to give to the municipal aspects of local transportation problems.

Fire Departments' Star Rising

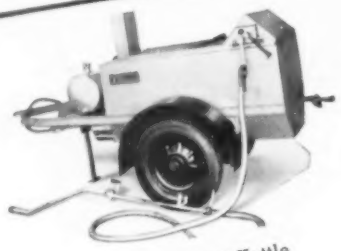
"AFTER this war is won, fire departments will be in the strongest position that they have ever held," said Albert H. Hall, director of the New York State War Council's Office of War Training Programs, at graduation exercises for 2,000 civilian defense auxiliary firemen of the Buffalo Fire Department on December 18, 1942.

"Think what it means, for example, to the Buffalo Fire Department to enroll thousands of auxiliaries from all walks of life. These citizens and their families learn about the fire department. They know how it operates. They know its problems. They will become its strong supporters in war, and in peace. Fire departments throughout the country should gain lasting citizen understanding of their personnel and equipment problems."

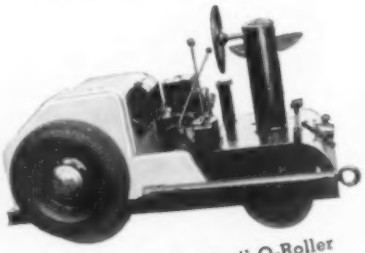


Released Official U. S. Navy Photograph.
U. S. S. Arizona in Pearl Harbor.

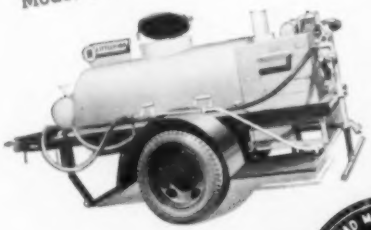
SINCE PEARL HARBOR



84-HD Asphalt Kettle



Model No. 155 Trail-O-Roller



No. 101 Utility Spray Tank

We have put our efforts to winning the war. We're in this struggle up to our necks and proud of the chance to do our part.

Needless to say, we are like most manufacturers—we cannot furnish equipment or parts without good reason. However, units now in the field doing important highway and airport construction or maintenance work can be helped through the Littleford Dealer Organization.

These Dealers have the facilities for repairing and servicing such Littleford units as 84-HD Kettles, No. 101 Utility Spray Tanks, Trail-O-Rollers, Burners, etc. If they do not have parts in stock, we will try to do all in our power to supply them.

Remember, Littleford equipment is helping to win the war by keeping vital roads, airports, streets, etc., ready for action.

There's a Littleford Dealer ready to serve you in every section of the country.

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LITTLEFORD BROS., INC.
500 E. Pearl Street, Cincinnati, Ohio

LITTLEFORD BROS., INC., CINCINNATI, OHIO

Buy War Bonds and Stamps. Help win the war for FREEDOM.

Local Government Is News—XXV*

City Hall, Strikes, and Collective Bargaining—2

By PHILLIPS BRADLEY

ON December 15 last, the War Labor Board handed down an historic opinion in the case, mentioned last month, of the strike of the sanitation employees in the Newark, N. J., Department of Public Works. The case itself is far more important than the issue involved in a labor dispute in a single city.

As a matter of fact, disputes from two other cities were directly involved in the decision. In Omaha, Nebr., an AFL union sought recognition as the sole bargaining unit in the metropolitan public utilities district. In New York City, the Transport Workers Union requested the Board's intervention in a dispute involving wages on the city's transit system. In all three cases, the Board refused to take jurisdiction. It stated that, under the Executive Order (No. 9017) creating it, it had "no power to issue any directive or regulation . . . governing the conduct of state and municipal agencies."

The cases aroused widespread interest and produced a marked reaction in many cities. At its annual meeting in December, the National Institute of Municipal Law Officers took a decided —and unanimous—stand against the power of the War Labor Board to intervene in the relations of local governments and their employees. Many corporation counsel were outspoken in public opposition to the Board's jurisdiction. During the period, the New Jersey Civil Service Commission refused to reinstate the fifteen dismissed Newark employees—as to whose status the original dispute arose. It is said that the White House itself advocated the decision handed down by the Board, for the reason that the opposite result would stir up a hornet's nest of controversy. All in all, the knotty question of federal-state relations has been given a new turn—or return—to pre-New-Deal principles.

Federal-State Relations Again

The results of this decision will be far-reaching on the future relations of City Halls with their employees throughout the country. In effect, the Federal Government has taken the position that it will not intervene during wartime—any more than in peacetime—in this aspect of municipal government.

One possible justification for jurisdiction by the War Labor Board might be found in the necessity of overall regulation of labor disputes in wartime. It may be argued that the national war effort will be impeded hardly less by a stoppage in essential local government services than by a strike in a war plant. To insure the most effective prosecution of the war, the relations of employers and employees should be stabilized in public service as well as in private industry.

Against these considerations was ranged the issue of states' rights, as well as of the legal character and conditions of public employment. The War Labor Board was confronted by a dilemma. It might assert its jurisdiction —only to find state and local governments solidly opposed to it on the question of its authority to intervene. It might refuse to accept jurisdiction and leave the whole question of possible strikes by civil servants to City Halls and State Capitols. That it chose the latter alternative may no doubt be attributed to the fact that it found the issue of federal-state relations too "hot" to handle.

Granted the pragmatic validity of the Board's decision, the question which it left to the decision of state and local governments is one of the first items of business on the agenda of every City Hall in 1943. Although the likelihood of strikes, especially in wartime, may be remote, a clarification of the bargaining rights—and duties—of civil servants remains to be solved. What about the legal status of public employment as it relates to this point?

> THE AMERICAN CITY *is interested in obtaining information on how local government officials have organized adjustment machinery in their relations with civil service and other employees. Write the Editor, 470 Fourth Avenue, New York, N. Y., giving details on union policies and collective-bargaining procedures in your city. Because of the timeliness of this problem, a prompt reply would be welcome.*

A No-Man's Land of the Law—Some Principles

As was pointed out last month, the right to join unions of their own choosing is generally accepted as a proper exercise of discretion by civil servants. The existence of AFL, CIO, and independent unions at all levels of government indicates that civil service status is no bar to union membership. The right has been recognized by most governments.

The question still remains, however, what—if any—current union practices are incompatible with public employment. What limits are there to the use of the organized power of a union to coerce City Hall—the employer—to accept the union's demands? May a union of government employees engage in the same tactics which a similar union might legally use in a dispute with a private employer?

It is altogether probable that these and related questions will be raised in many City Halls this year. Answers will be demanded by the more militant unions, if not by the threat of strike, certainly at the cost of a decline in morale and lowered working efficiency. The difficulties of the lower-salaried public employees during the present unstable economic period impose an obligation on municipal and state officials to establish adequate machinery for adjustment voluntarily and promptly.

If union membership is recognized as a right, there are no less certainly limits to its discretionary exercise in a dispute with City Hall. These limits flow from the legal basis of public employment—whether or not a civil service system has been created by constitutional or statutory prescription. A civil servant cannot, for instance, be forced to join or maintain membership in a union as a condition of his employment. He is free to join or not as he chooses and to resign at will. Here is one essential difference between public and private employment which is universally accepted.

That this rule as to the voluntary character of civil service unions is in conformity with the correct view of the legal status of the public employee there can be no doubt. Although the

* This article begins the third year of Professor Bradley's monthly discussions of problems affecting the relations of municipal officials with their constituents and employees.

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precise question has been before the courts in only a few states, their answer has been uniformly opposed to closed shop or maintenance-of-membership stipulations.* It is significant, too, that both the national and the various state Labor Relations Acts and similar laws governing labor relations in industry specifically exclude public employees from their scope.

Civil Service Status and the Right to Strike: The Balance Sheet

Many of the rights and duties of civil servants are defined by constitutional or statutory provisions governing such matters as appointment, promotion, pay, and tenure. These definitions are usually implemented by the Civil Service Commission or whatever other agency is designated to administer public-employment policies. Any union demand which runs counter to existing legislative or administrative regulations is, therefore, clearly beyond the authority of the civil service agency to adopt. Any other interpretation of civil service law obviously would vest power to modify state or local legislative policy in an unofficial and unrecognized private organization. The recent refusal of the New Jersey Civil Service Commission, noted above, to reinstate dismissed union employees in Newark is a case in point. The rights enjoyed by civil servants under law are governmental, not individual, in origin; they can be altered only by the same authority which created them—City Hall or the State Capitol.

At least in civil service jurisdictions, public employees enjoy substantial benefits from their status. Selection is far more objective than in private employment. Pay rates, if too often lower than for equivalent outside work, are in general more steady than in the open labor market. In most public services, promotion opportunities are defined and pension rights guaranteed. Tenure provides security rarely found in other occupations. These and other benefits accruing to the civil servant must be balanced against any assumed right to strike to win demands or redress grievances.

An even more persuasive argument than any mere calculus of benefits is the duty owed by the civil servant to the public. Acceptance of public employment involves certain responsibilities—responsibilities different in kind as well as degree from those customarily identified with private employment. One duty is certainly to maintain the service for which one is selected. Stoppage, at the will of the employee, is hardly compatible with the obligation of service to the community, no matter what the grievance may be. It may, indeed, be said that this is a condition of civil service status, attaching upon accepting a position under City Hall, a condition which may not be abrogated without mutual consent.

It must be frankly admitted, however, that not every City Hall lives up to the spirit, if not the letter, of collective bargaining for the adjustment of grievances. Most civil service laws and ordinances are silent on the matter. Many governmental units exploit those employees not protected by precise legal definitions. Conditions of work and pay for the labor force of too many municipalities reflect the practices and attitudes of the most autocratic private employers. It is a good deal to expect that civil servants, confronted by conditions of work lagging far behind those established in many industries, should recognize a duty to a public too indifferent to their welfare or their rights as workers to grant them a hearing.

Whatever the conditions of public employment, every City Hall has, as suggested last month, an obligation to its civil servants corresponding to their duty to it. That obligation is to create the machinery for consultation and adjustment between itself and its employees, whether individuals or organized unions. Much progress has already been made by many City Halls all over the country. The present turn of events opens new opportunities to develop adequate adjustment machinery where it has not been established or to improve it where it has. The decision of the War Labor Board places a direct and immediate responsibility on every City Hall to install a sound system of labor relations in 1943.

EDITORIAL NOTE.—During December THE AMERICAN CITY received two articles on the subject covered by the foregoing discussion. The importance and timeliness of the subject has seemed to merit the publication of both. For the other, article—by Charles S. Rhyne—see page 89.

* See *Chapin v. Bd. of Education of Peoria* (Illinois), 5 Municipal Law Journal (1940) 24, 72; *Petrucci v. Hogan*, 27 N. Y. S. (2nd) 718 (1941). A minority of cases hold that cities may not prescribe only union workers on city jobs or contracts or that cities may dismiss employees joining unions.

Municipal Fiscal Policies to Aid Victory and Post-War Readjustments

EMPHASIZING the fact that local and state governments can expedite victory through their services and fiscal policies, and that by preparing now they can help offset depression in the post-war period, the Council of State Governments offers practical suggestions for state and local action. Thirteen specific measures are recommended by the Council's Tax Committee in a statement published in the December 1942 issue of *State Government:*

1. Pay off debts as rapidly as possible; where obligations have not matured or are not callable, build up sinking funds beyond scheduled requirements to counterbalance the debt;

2. Rigidly restrict both new and customary expenditures to essential war activities and necessary governmental functions;

3. Improve administrative management so as to conserve manpower and materials and to minimize impairments of services;

4. Enact legislation permitting surplus financing with proper safeguards;

5. Build up reserves for emergency and post-war needs, invest them in government bonds or other appropriate securities, and provide safeguards to keep these reserves intact;

6. Maintain tax rates consistent with the objective of the economic stabilization program and the policy of building up reserves for emergency or post-war use;

7. Remove all trade barriers and other hindrances to war production;

8. Convert state and local facilities, where possible, to war uses;

9. Join actively in making effective the national program of economic stabilization which is designed to control the cost of living and the costs of war production;

10. Distinguish carefully between war-created state and local needs that warrant federal aid and those that should properly be met out of state and local resources;

11. Re-appraise the educational system, giving special consideration to vocational training and rehabilitation and their relation to the war program;

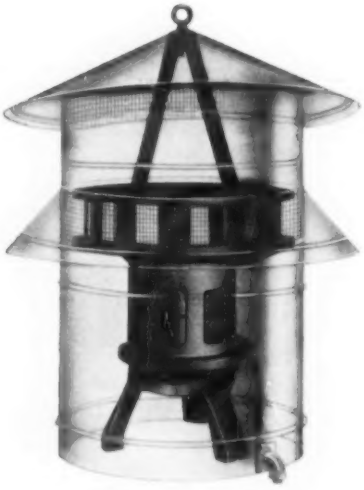
12. Re-appraise existing health, welfare, and related activities and services in the light of changed economic conditions and war needs;

13. Prepare to offset possible post-war depression by developing programs and blueprints for public works and services, and by accumulating means of financing them.

Municipal Radio Profitable

Jacksonville, Fla., reports a net profit of $540,416 for 17 years' operation of the city-owned radio station WJAX, a 5,000-watt NBC affiliate. The profits have been turned into the city's general revenue fund, according to the American Municipal Association.

How PHILADELPHIA is Protected by FEDERAL Air Raid Sirens



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This practical installation gives Philadelphia maximum protection at low cost, once again proving the efficiency of the air-raid-tested FEDERAL System—a multiplicity of small electric sirens, closely spaced.

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Traffic Control and Facilitation

Conducted by Traffic Control & Facilitation Committee, Institute of Traffic Engineers, 60 John St., New York

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Traffic Signal Cheapest War Traffic Facilitator

By Maxwell Halsey

Executive Director
Michigan State Safety Commission

TRAFFIC-control equipment can in many cases be obtained quickly and relatively cheaply, compared with construction or reconstruction. Wherever such devices can be economically justified they should be installed because of this quickness.

Increase Signal Flexibility—It is recommended that actuated signals be used at all locations except those interconnected or coordinated with existing signals. It is recommended that all isolated fixed-time signals be supplied with time clocks to increase their efficiency.

Suspended Signals—It is recommended that two four-way suspension signals be utilized where possible because of their cheapness and quickness of erection.

Relocate Signals—As war plants redistribute traffic flows, it may be necessary to move certain signals to new locations.

The Need for Signalization

Signals at Factory Entrances—One location materially affected by increases in employment is the outlet of parking lots located at war plants. Not only has the number of vehicles leaving these lots increased, but with the schedule of increased working hours and the staggering of working hours the problem of getting onto a street or highway has multiplied as well. Manually operated traffic signals are preferable in such locations.

Redistribution of Traffic—No-turning laws and redistribution of traffic can create problems on streets where none previously existed and may require signal control.

Enlarged War Plants—Many new buildings are being erected where none stood before. Manufacturing plants which are employing anywhere from 5,000 to 30,000 more workers at one time and which are located on what were formerly inoffensive farmers' fields, are now generators of sizable traffic volumes. These plants create signal problems not only at the immediate location, but also all along a street or highway which normally carried very light volumes of traffic.

Pedestrian Protection — These increases in traffic volumes are dangerous to pedestrians as well as drivers. These problems exist at normal pedestrian crossings and at schools.

Kinds of Traffic-Signal Controls

Types of control equipment that may be used in this emergency vary from simple manually operated relay groups and cam shafts through ordinary fixed-time fully actuated to the efficient density sensitive fully actuated type. Priorities of course place limitations on the quantity and type of traffic-control equipment obtainable. Traffic-control equipment does not have the undesirable characteristics of permanent structures such as concrete pavements, grade separations, sidewalks. Under normal conditions it may be generally stated that the only unsalvageable portion of a traffic-signal installation is the labor. Frequently the cable and conduit may be salvaged.

Manually Operated—At parking lot gates the simplest manually operated type of control is indicated. This holds wherever a periodic entering or leaving operation takes place.

On the streets, some form of completely electrically controlled mechanism is indicated for 24-hour operation.

Fixed-Time—In some instances it may be desirable to use fixed-time equipment having several off-set positions and cycle changes to suit different hours of the day. The occurrence of these special off-sets or cycle-length operations may be brought about by manual or time clock changes. If a fixed-time signal is installed at an isolated location where the distance to the adjacent signal is so great that progression could not be maintained, a control of good design using an induction motor or one driven by a synchronous motor would adequately handle the job. However, when a fixed-time signal is installed near adjacent signals it is practically mandatory to use synchronous motor-driven equipment when non-interconnected progression is indicated.

Semi-Traffic-Actuated — Semi-traffic-actuated equipment to a certain degree puts assignment of right-of-way up to the traffic. In locations where the major street is predominantly the preference route and side-street interruptions occur infrequently, or when their occurrence takes place at times other than during the peak flow on the major route, semi-traffic-actuated equipment is frequently used.

Full-Traffic-Actuated — Full-traffic-actuated equipment with detectors on all approaches, is the last word in providing control which responds to constantly fluctuating demands of traffic volumes on intersection streets. A full traffic-actuated control will vary its time assignment all along the scale from the minimum interval to the maximum interval, depending on traffic requirements.

For Maximum Visibility—Traffic-minded gatherings frequently say that "traffic signals should be located so that a person knows where to look for them." This is not enough. Traffic signals should be placed where a motorist can see them without having to look for them. This may mean the single or combined use of span, post, or mast-arm mountings.

The advantages and disadvantages of the span-type signal installation include the following:

Advantages

1. Over-the-lane mountings provide better visibility to vehicle traffic, especially on wide pavements. They are readily adaptable for indicating various lane movements.

Above articel is based on material in Part IV Better Use of Street, of Manual on the Conservation of Vital War Transportation and Vital War Manpower.

A WARTIME MESSAGE

To Highway Officials and Engineers!

THE same principles of wartime conservation, that civilians practice with their automobiles and tires, apply with equal urgency in the matter of the nation's highways.

This year's needs are not for pioneering new routes or building new cross-country highways, but rather for protecting and saving what we've got—for dependable and economical maintenance that will preserve the three million miles of existing roads that are the world's greatest highway system.

We Americans know from experience that poor roads save no one money. There is no calculating what they cost in excessive wear to tires and automobiles, in delays to vital transportation and in lost opportunities. They do not contribute to winning the war, and they have no place in America's victory program.

For these reasons, as well as to protect the investments in the roads themselves, highway engineers and road officials are advised to concentrate much of their efforts upon maintenance for 1943.

If your own budget seems inadequate for all it must accomplish, remember there is a right type Tarvia and a right Tarvia method for almost every type of highway maintenance and repair. The Tarvia field man, backed by Barrett's 37 years of paving experience, will be glad to suggest quick and economical ways Tarvia can be used to provide the most miles of good roads for wartime travel.

Barrett Tarvia*

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2. Because of the small amount of underground work necessary, this type of installation can be made more quickly.
3. Span-type signals require less material and less labor.
4. Span-type signals probably provide a higher percentage of materials and equipment salvage than any other type.

Disadvantages

1. The use of down guys as anchorages for the post supporting span-type signals is frequently undesirable, and self-sustaining steel posts imbedded in concrete must be used. These may not be available.
2. In some sections there may be criticism levelled at their appearance.
3. Lamp changes and cleaning require aerial equipment.

Many materials used in the manufacture of traffic signal heads, controls, and accessories are controlled by priorities. Thus it may be necessary to use equipment which has been dubbed obsolete.

During the crest of the wave of small-town traffic-signal installations, impressive layouts were made which were beyond the necessities of the communities. Thousands of feet of unused inter-connecting cable may be lying in city streets. Great care should be exercised in using salvaged and obsolete equipment to be certain that it will operate after the job has been done. Cable should be checked. Care must be exercised in drawing cables out of ducts. Many of the older signals are cast iron, heavy, and may complicate span-type or mast-arm mountings.

Melting Ice with Salt Saves Men and Tires

By WILLIAM H. WOODWARD

Deputy Superintendent of Streets and Engineering
Springfield, Massachusetts

EVERY industrial American city forms an important sector of the war front. Keeping city streets, particularly main traffic arteries, clear of ice and snow this winter is part of the war effort. It is now complicated by a formidable lack of manpower. Here in Springfield, Mass., our war job in a city of defense industries is to keep open Main Street, Columbus Avenue, Dwight Street, and State Street. If these four thoroughfares can be kept clear, all through traffic on state highways and the major traffic load of the city at peak hours can be taken care of. These streets represent about sixteen miles of pavement, and this vital section of the city's traffic network calls for special treatment. That treatment is salt, and we have passed the experimental stage in its use.

During the last three years, plain salt on these key streets has prevented ice formation, facilitated snow removal, and kept the surface relatively dry. About five miles of additional highway surface is treated with plain salt under normal storm conditions. This winter we also will use salt on stretches of one and one-half miles on Hancock and Walnut Streets which are virtually military roads since they connect the main Springfield Arsenal with the Water Shops Division of the arsenal. The military emergency makes this treatment necessary. Much of our winter problem is due to Springfield's hills. This winter we will treat the bad grades in the city with plain salt at the start of each storm.

Salt saves manpower. It is only necessary to salt a pavement once during a storm, while if we used sand we would have to send out trucks three or four times during a storm. The same territory can be cared for in a shorter time with a smaller gang. The additional saving on tires is a big factor this year, and one salt trip per storm is better than three or four sand trips.

Springfield has 250 miles of paved streets. Bus routes, bridges, traffic lights, and stop sign intersections are treated with a mixture of sand and salt on the arrival of a snow storm, in the proportion of forty pounds of salt to a ton of sand. This proportion was worked out in our laboratory when we instituted this method.

The storm control room of the Springfield Street Division is in telephone communication with the Hartford Weather Bureau, and regular barometer and thermometer readings are taken to keep in touch with approaching bad weather. Salt and sand trucks are ready and manned when the storm hits. The city is divided into twenty-two sections, and the locations to be treated with salted sand in these sections are listed on cards. A card is handed to each driver as he leaves the street division yard, and he is responsible for checking off the locations as they receive proper treatment. When snow reaches one inch, truck gangs with plain salt go to designated locations and within a few hours the entire city has been treated. Emergency boxes of sand with salt are permanently stationed through the winter at twenty locations, principally bad hills.

A carefully organized system has been devised for handling complaints. Special service for touching up stretches of icy or blocked pavement is coordinated with the complaint bureau of the police department.

The street division is equipped with thirty-two sanding rigs of the Anderson, Burch, Galion, and Highway spreader types. Most of them hook on to a 1½-ton Ford truck. Five-ton Autocar and 4-wheel drive trucks are equipped with motor-driven spreaders and used for plain salt distribution.

For the sand and salt distribution a force of about sixty men must be on call at any hour of day or night. Snow plowing is handled by seventy-seven mounted plows which start operation when the snow is three inches deep. During a severe storm up to one hundred additional trucks are called into use for snow removal with one hundred and twenty-five to one hundred and fifty men in addition to the salting and sanding gangs. The city has nine snow loaders. Snow is dumped through special manholes in one of the bridges over the Connecticut River, in a tipple over Mill River, and at a main snow dump. In case of an unusually heavy snowfall thirty-three vacant lots have been spotted around the city as emergency snow dumps. Springfield is in a snow belt with an average annual precipitation of thirty-two inches.

HALT—WHO GOES THERE?

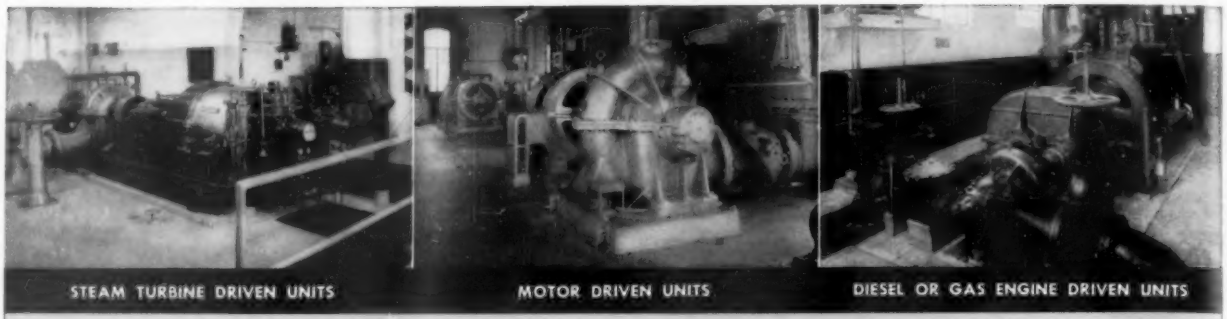
Consider the traffic signal as a silent sentinel which guards the lives and property of all who traverse the intersection under its watchful eye.

As it tirelessly blinks its warning, only the most foolhardy driver or pedestrian will fail to heed the challenge.

"Just a word on the negligent knave
Who considers himself pretty brave,
Over train tracks he lags
While the semaphore wags. . . .
This bird's got three wheels in the grave."

—*Los Angeles Police.*

Women and men in uniforms of the armed services ride Milwaukee buses and street-cars on half fare during non-rush hours Monday through Friday and all hours Saturday and Sunday. Chicago and Detroit allow similar limited privileges; other cities rejected the plan because of the growing load.—*American Municipal Association.*



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WORTHINGTON

Below is the emergency control operator's desk at the Toronto Transportation Commission's Hillcrest yard; at right, the antenna on water tower and a supervisor.

Radio Speeds Street-Car

By James Montagnes

TWO-WAY, short-wave radio communication is helping the Toronto Transportation Commission to speed up street-car and bus traffic in Canada's second largest city. With many war industries located in and near the city and an increase in population of over 100,000 since Canada went to war in September 1939, the T.T.C. has faced an increasing problem of keeping its nearly 325 miles of tracks and bus routes in operation without delays and traffic snarls.

To aid in keeping the increasing traffic moving, the T.T.C. late in 1940 applied for the purchase of a 400-watt frequency-modulated short-wave radio system which would enable the traffic dispatcher at the system's central shops to keep in two-way touch with a fleet of ten traffic supervisors operating in automobiles. Because of the wartime need for transportation in Toronto, the T.T.C. was able to procure top priority rating, but not till the end of October 1942 did a portion of the equipment arrive, the needs of the armed services delaying earlier shipment.

The T.T.C. has now in use a 400-watt Radio Engineering Laboratories frequency-modulated transmitter, CK6H call letters, operating on a frequency of 36.3 megacycles. Four mobile units have been obtained allowing two-way communication by traffic supervisors up to four and one-half miles from the central installation. The equipment was obtained through the Canadian Marconi Co. Ltd., Montreal, who installed it and services it, thus eliminating the need for special service operators being employed by the T.T.C.

Until the installation of the static-free short-wave radio system, the traffic supervisors could only be reached through the 74 private-line telephone boxes scattered through the city by the T.T.C. and connected with the dispatcher's office. The sending out of emergency and repair equipment or supervisors to undo traffic snarls took time required to reach telephone boxes and round up equipment on the road. With the two-way radio system, which is to be extended to all emergency equipment as soon as the installations can be obtained, it is possible quickly to reach traffic tie-ups and accidents.

Traffic carried on the municipally owned T.T.C. has reached all-time peak figures. During 1939 the system carried 154,089,720 passengers, and the highest record to that time was 207,000,000 carried in 1929. In 1942 over 225,000,000 were carried. The weekly number of passengers using the system in 1939 averaged 480,000; in the latter part of 1942, 864,000. The system operates with over 900 street-cars and 250 buses.

To cope with such increasing wartime traffic brought about by large war industries in the Toronto region, the T.T.C was able to procure the high priority ratings necessary to obtain this short-wave radio equipment, the first of its kind in operation in Canada.

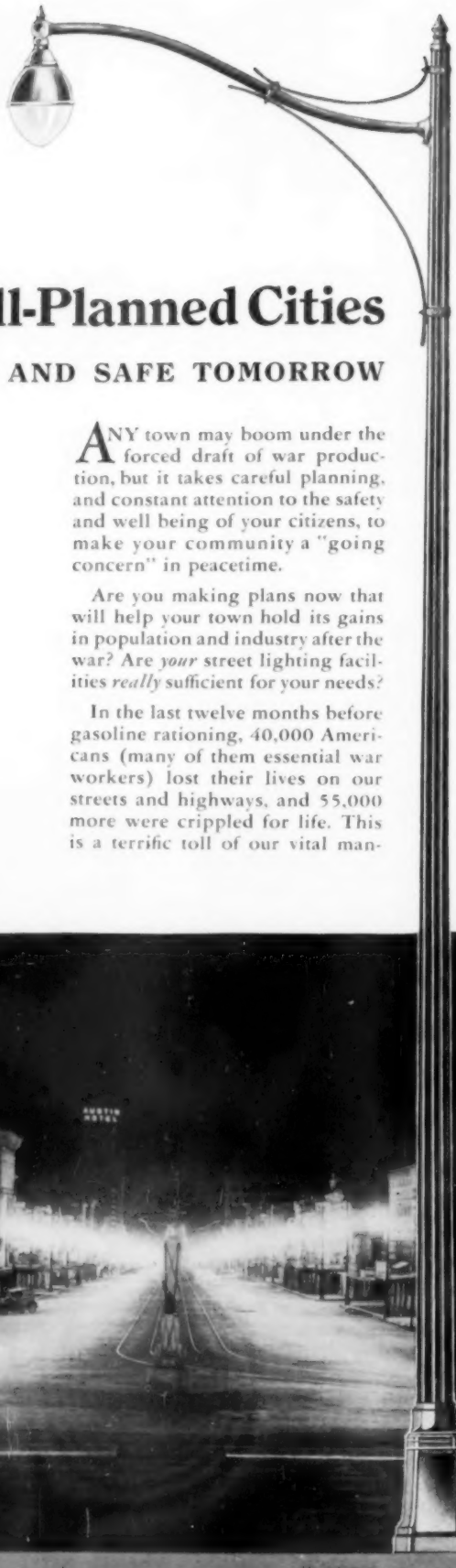
Group Riding, Fewer Stops, More Vehicle Trips, Call for Local Cooperation

GROUP riding and staggering industrial, business, and even school hours in populous communities have the same practical effect as adding many new cars and buses to the supply. In Washington, we have had staggered hours for a long time, and they have been a life saver to the transit systems and to the people who must be moved. I am happy to say that many other communities have adopted the plan with equally good results. The idea is spreading rapidly throughout the country, but it must be promoted continually and intensively by the local people.

There are other ways to make the existing equipment do more work. It must get over the ground as quickly as possible, subject, of course, to the 35-mile-per-hour limit, avoid delays, and bring the number of trips to the maximum. This means cutting the number of stops to the minimum. "Skip stops" has come to be a name for this plan. Another way is to improve traffic regulations and the routing of equipment.

An acute emergency exists in local transportation. The task to be performed comes close to making bricks without straw. Local transportation systems must have the unremitting help of the people of the country, and the people will suffer considerable inconvenience, discomfort, and vexation in the process.

Joseph B. Eastman,
Director of ODT, Washington, D. C.



Today's Well-Planned Cities

WILL BE LIGHT AND SAFE TOMORROW

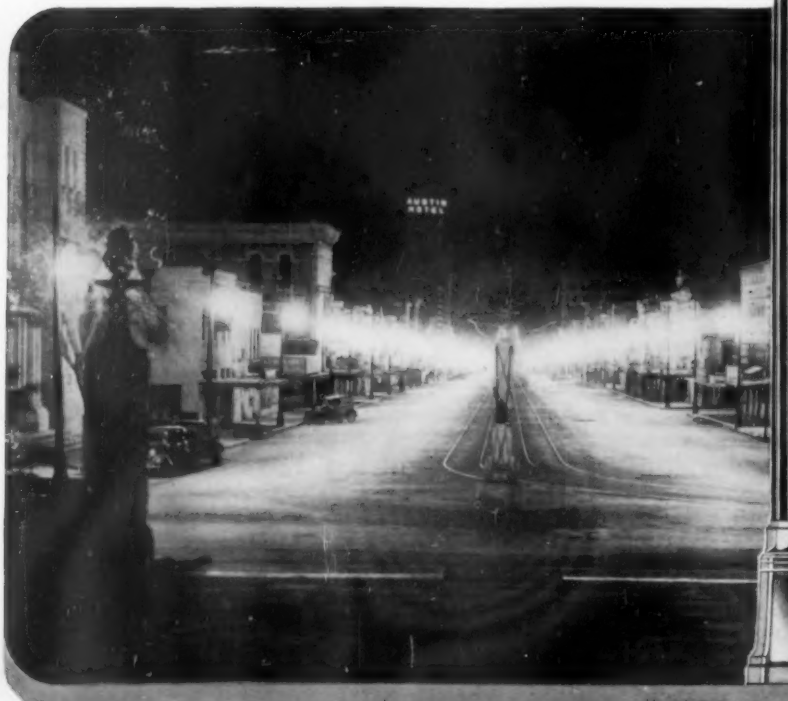
ANY town may boom under the forced draft of war production, but it takes careful planning, and constant attention to the safety and well being of your citizens, to make your community a "going concern" in peacetime.

Are you making plans now that will help your town hold its gains in population and industry after the war? Are *your* street lighting facilities *really* sufficient for your needs?

In the last twelve months before gasoline rationing, 40,000 Americans (many of them essential war workers) lost their lives on our streets and highways, and 55,000 more were crippled for life. This is a terrific toll of our vital manpower, and an awful price to pay for neglected lighting facilities—*for 60 per cent of these accidents happened after dark.*

When battles cease and automobiles again roll from our production lines, the hazards of night driving will become more acute. It is then that foresight and intelligent city planning on your part can make itself evident. It is then that your town will either enjoy the rewards of your foresight, or be handicapped by dark and dangerous streets.

Toward planning now for a brighter future, Union Metal offers you the advice of its trained engineering staff. For even though our production facilities are now entirely devoted to the nation's war effort, we feel that our 35 years' experience in the design and construction of street lighting standards can be of real value to you today *and* tomorrow. Write for catalog.



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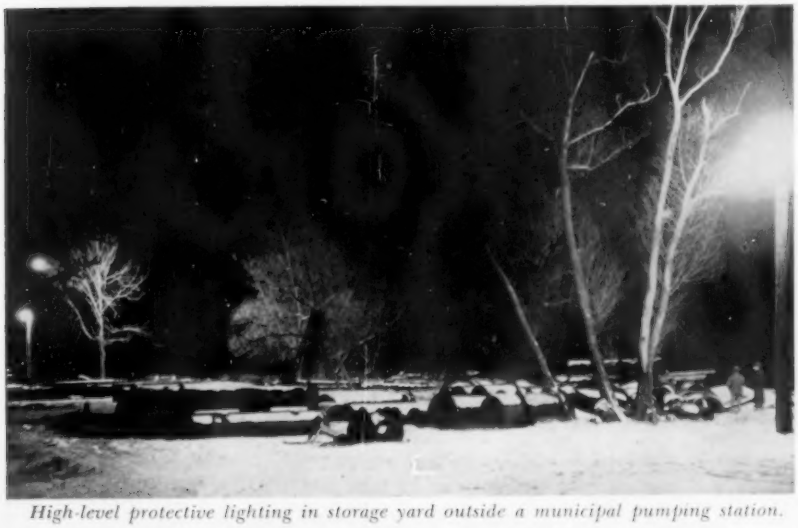
Streets—Highways—Floodlighting

Protective Lighting for Water Works

By R. J. Swackhamer
General Electric Illuminating Laboratory
Schenectady, N. Y.

THERE are three main areas to be considered when planning illumination of a water-works system for effective night protection. These are (1) the source of the water, (2) the distribution system, and (3) the storage facilities. Because the physical makeup of individual plants varies widely, each case will require some individual planning. The following recommendations, however, have been found through experience to cover all the lighting requisites of water-works systems in general.

Protective lighting should be planned for the worst possible visibility conditions in order to help foil the would-be saboteur at a time when he is most likely to attempt entry. Possible dark spots or shadows should be prevented in area lighting by planning to have every point receive light from more than one source, and in fence lighting by spacing the luminaires close enough to each other to provide an overlap of light. All fence-lighting equipment should be kept well within the property in order to frustrate attempts to put it out of operation.



High-level protective lighting in storage yard outside a municipal pumping station.

Tower-lighted slope of reservoir; again note excellent visibility.

Wherever surrounding terrain makes access possible by an intruder, the area should be fenced and the fence lighted to facilitate night vision of the guards. Guard towers should be installed where large areas with long fencelines are involved, since this type of observation offers more uniform protection than routine checkups by foot. These towers should be spaced 1,500 to 2,000 feet apart, either at the fenceline or well behind it, with searchlights provided for use in an emergency.

When guard towers are situated at the fenceline or when vehicles on a patrol road are used, maximum illumination should be concentrated along the fence and immediately inside and outside the fenceline. The patrol or guard tower is thus kept in comparative darkness, with any intruder clearly visible to the hidden guard.

For such illumination, a shielded luminaire with a deep reflector and a prismatic glass bowl refractor is most effective. This type of luminaire, when mounted 25 feet high on poles and 10 to 15 feet inside the fenceline, gives adequate light 100 to 150 feet beyond the fence and provides a bright path of light 10 to 15 feet wide along the inside border. When the guard must observe the borderline of the property from 100 feet or more behind the fence, a luminaire with a relatively narrow beam is recommended.

Floodlighting has not found as wide use in the illumination of fences as have street-lighting luminaires, since the latter are more economical to operate and more effective.

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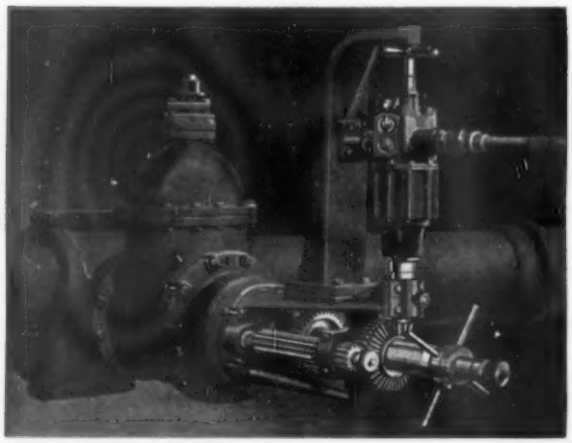

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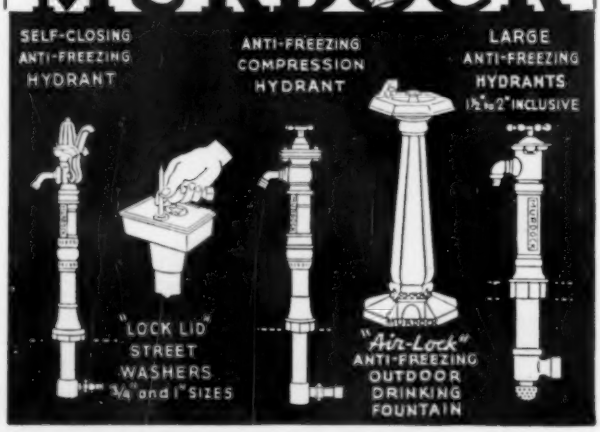
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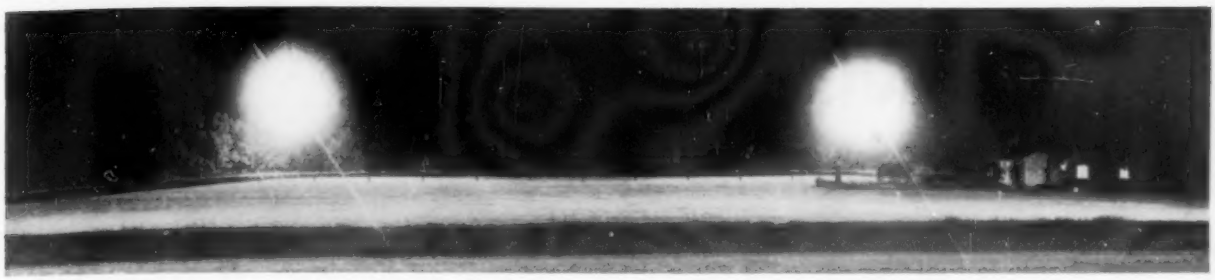

Tower lighting on a water-works underground reservoir; note clear visibility.

floodlights, mounted on the buildings and directed outward toward the fence and beyond. Fence lighting, supplemented by illumination from floodlights mounted on poles, is recommended for large plants. The spacing of the floodlight poles should not exceed four times mounting height. Usual practice consists of 40- to 70-foot poles spaced 150 to 350 feet apart and mounting from two to five 1,000- or 1,500-watt floodlights. This will provide illumination equivalent to 0.06 to 0.20 watts per square foot of area.

Tanks, stand pipes, and water mains located above ground should be fenced, guarded, and floodlighted wherever possible. Underground reservoirs also should be fenced and floodlighted.

The natural elevation of the terraced portion of an underground reservoir usually will provide an ideal location from which to floodlight and observe the boundaries of the property. Proper guarding as well as proper lighting is required for the feed water and spill of open reservoirs and dams. Guard towers equipped with controllable searchlights will provide a very satisfactory means of protection for these points. Care should be taken when planning such a tower to see that all other sources of light interfering with good vision are screened and that the tower is high enough to keep the guard's eye well above other nearby protective lighting sources.

The top of the dam and any fenced portion of the reservoir should be lighted in the manner prescribed for fences, and a wide area of water surface above and below the dam should be floodlighted to facilitate the detection of floating mines or other objects which might be placed there by fifth-columnists.

Do Street Lights Give Comfort to the Enemy?

NO American would countenance any course which might give comfort to the enemy or add to the hazard of our own people. The dimout of coastal lights which contribute to a skyglow, against which our ships are silhouetted for easier submarine gunnery, is conceded to be essential.

Should street lights be included in dimout? If they produce skyglow on the coast, they should be dimmed. Street lighting in the majority of communities is out of step with modern traffic requirements; the glow is none too good directly underneath the lamps. With shielding reflectors there is said to be no illumination above the horizontal. Yet inadequate as street lighting is in most communities, it is the only protection which drivers and pedestrians have on the streets at night. In many, if not most, communities these lights have been further weakened. The new regulations for the Second Corps Area, which are said to be a pattern for the coastal regulations generally, require that—

> All exterior lights used for illumination of streets or guidance of traffic, except exterior automobile lamps, shall be reduced in wattage and number to the minimum consistent with their purpose, and those retained in use shall be permanently shielded in such a manner that the source of light will not be visible above the horizontal.

The 19 per cent increase in night traffic accidents and deaths in New York City, according to state motor vehicle figures, raises the question of how far wattage and number of street lamps can be reduced consistent with the purpose of these lights. This increase in night accidents is in the face of a considerable decrease in traffic volume in New York City.

The inland steel city of Pittsburgh, Pa., reports a 23 per cent decrease in accidents and a 9 per cent increase in fatalities during the last ten months. The accident experience between 6 P.M. and 6 A.M. was as follows: 48 per cent of all traffic accidents; 59 per cent of the fatal accidents. Says the Pittsburgh Public Safety Department:

> No consolation can be taken from the fact that fewer persons were injured in Pittsburgh in traffic accidents during the first ten months of this year as compared with a corresponding period last year. The decrease in the number of accidents and persons injured is neither commensurate with the increase in traffic deaths nor the decreased usage of private passenger cars and less mileage travelled. Let's not kid ourselves that gas and tire rationing and the 35 mile per hour speed limit are solving the traffic accident problem. The quality of driving has shown little improvement. The travesty on American lives lost or persons needlessly injured in traffic accidents has a direct bearing on Pittsburgh's war effort, since every man, woman, and child is directly or indirectly a part of this nation's plan for victory.

If there were no taxicabs, trucks, and buses, there would still be need for street lights as protection against pedestrian stumblings and holdups, to say nothing of the better spirit engendered by less cheerless streets. It is known that street lights give comfort to citizens. Where they give greater comfort to the enemy, they must be dimmed accordingly. But do they give such enemy comfort a few miles from the coast? Has their glow, if any, been examined separately from the commercial lighting of a city? If street lights do not figure noticeably in skyglow, why not cease to regard them as a menace and let city officials continue to make them aid in the normal protection of the city at night. Where it is felt that modification is desirable, this can be attained by shielding in accordance with the requirements of the location.

Berkeley, Calif., is using two methods for marking dimout areas. The first method consists of painting electroliers and street lights at dimout area boundaries a distinctive blue color; the second, painting the words "dimout" and "end of dimout" on the pavement at boundaries of such areas. The paint contains a type of material which acts as a reflector so the markings are more distinctive than ordinary paint, according to Public Administration Clearing House, Chicago.

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Zoning and Planning Notes

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Amortization of Nonconforming Uses

The new Chicago zoning ordinance, adopted December 3, 1942, contains provisions with regard to nonconforming uses well worthy of consideration. These provisions are based upon the principle that such uses, which should be abolished as soon as reasonably possible, may in some cases and subject to reasonable conditions, be discontinued when amortized.

The Chicago ordinance creates a specialty shop district classification. In these districts such uses as barber shops, beauty parlors, custom dressmaking establishments, offices, pharmacies, restaurants, retail stores, and uses auxiliary to them are permitted on the first floor of an apartment house. These uses, and all business and industrial uses in residential districts, if nonconforming, shall be discontinued with transfer of ownership or termination of existing lease, unless maintained in a building designed for such noncomforming use, or reconstructed or enlarged in major part for it, within fifty years; in which event such use shall be discontinued when fifty years have elapsed from the time of such erection, reconstruction, or enlargement.

The City Council may grant variances in these uses in special cases—for practical difficulties or particular hardship.

The feasibility and justice of the abolition of nonconforming uses when amortized have often been recognized, but such abolition has seldom been formally provided for in zoning ordinances, although the principle may have been the basis of a few legal decisions abolishing such uses under ordinances which do not provide for discontinuance in so many words, on this ground.

Zoning in War Times

The National Housing Agency, Washington, D. C., Division of Urban Studies, under date of December 3, 1942, has published a Bulletin No. 6 (Supplement No. 1), entitled "Zoning in Relation to the Homes Use Problem." This supplement gives specific cases of zoning administration and amendment to meet local situations in these times, prefaced by a general summary.

"In general," this summary says, ". . . a strong feeling prevails regarding the formal preservation of the integrity of the zoning ordinances. . . . It is, however, not uncommon for the communities to grant variances and to overlook or countenance violations, particularly of use and area regulations in construction and alteration of dwellings.

"It appears that many of the reporting communities consider that the multiple-family residence districts, as zoned, provide the logical areas for additional housing accommodations through homes use programs, both as to room and housekeeping facilities. Relaxation of zoning to permit a larger number of families also seems to be most acceptable for the multiple-family districts. It is recognized by some communities, however, that the single-family residence districts have an obligation in war housing, and some of them consider adjustment to increase, temporarily, the permitted number of roomers in these districts as the contribution least likely to injure the character of the district.

"Several communities have reported that the obstacle to greater utilization of existing dwelling structures is not to be found in the zoning regulations but in the provisions of their building codes, requiring use of certain specified forms of construction and materials, standards of room size, window openings, etc. In other instances state housing codes are still more restrictive than the local zoning ordinances and require other than local action for change of provisions."

Massachusetts Planning Law

The November number of *A Planning Forum*, issued by the Massachusetts Planning Board, located at 11 Beacon Street, Boston, consists of a useful statement of the planning law of the state, with all amendments to date.

Board of Appeals—Record of Determination

CONNECTICUT.—*Nielsen v. Board of Appeals on Zoning of City of Bridgeport*, Supreme Court, July 10, 1942, reported in 27 Atl. (2) 392.

The city of Bridgeport has a zoning regulation providing that no building or premises shall be used for the sale of liquor if any entrance to it is within fifteen hundred feet of the entrance of any other building or premises so used. Paulos and Lalioris applied to the Board of Appeals to vary this restriction and allow them a liquor permit for their premises. The state statutes provide that whenever a zoning authority or board of appeals shall make any change in a zoning regulation it shall state upon its records the reason why the change is made. In this case the application was granted but no reason was stated on the record for so doing. The plaintiffs, Nielsen and others, liquor dealers in the restricted district, contested the validity of the permit given Paulos and Lalioris on the ground that the statutory requirement was not complied with.

The court holds that, nevertheless, the permit is valid, saying in its opinion that while it is the duty of boards of appeal to comply with the statute, there is nothing contained in the statute expressive of an intention to make compliance a condition precedent to action or create a limitation of power.

EDITOR'S NOTE.—This decision, under Connecticut law, would seem to be unfortunate, since it leaves the desirable requirement of an adequate record by boards of appeal in Connecticut without provision for its enforcement. It is contrary to decisions under New York laws and those of other states. See, for instance, *Hopkins v. Board of Appeals*, in our Notes for June, 1942, and *Berg v. Zoning Board of Review of City of Warwick*, in our Notes for December, 1940.

Eminent Domain—Streets

NEW YORK.—*City of Little Falls* v. *State*, Court of Claims, October 7, 1942, reported in 37 N.Y.S. 463.

The state has appropriated a portion of a public street in the city of Little Falls for state canal purposes; and the city claims compensation from the state. This claim the court denies.

There is no reference in the Constitution to compensation for the taking of public property for public use. The Legislature may authorize the appropriation of property owned by a municipality and devoted to a public use for a different use without the allowance of compensation. Streets in cities are held in trust for the public generally and may be put to a different use by the state without compensation to municipalities owning them. The use of land for canal purposes is a public use. The street if owned by the city is owned by it in its public and not in its private capacity. The city is not entitled to compensation.

Zoning Board of Appeals —Exception—Variance

RHODE ISLAND.—*Dunham* v. *Zoning Board of Appeals of Town of Westerly*, Sup. Ct., June 5, 1942, reported in 26 Atl. (2) 614.

The land in question is situated in a residential district created by the zoning ordinance of the town of Westerly. This ordinance provides that the zoning board of appeals may permit the location in any use district of a public utility plant.

The owner of this land and the Narragansett Electric Company obtained from the board permission to locate such a plant on the land.

The petitioners, objecting to the action, contend that because of the fact that the ordinance provides for a district for industrial establishments, it forbids the location of such establishments elsewhere; but loses sight of the fact that the location elsewhere is allowed under the provisions of the ordinance for exceptions. Finally the petitioners claim that the permit to the Electric Company was wrongly granted because no evidence of practical difficulty or unnecessary hardships which would be caused the Electric Company if obliged to locate elsewhere was introduced, but such evidence under the law and the ordinance is not required for the granting of an exception to the ordinance, as it is for a variance of it.

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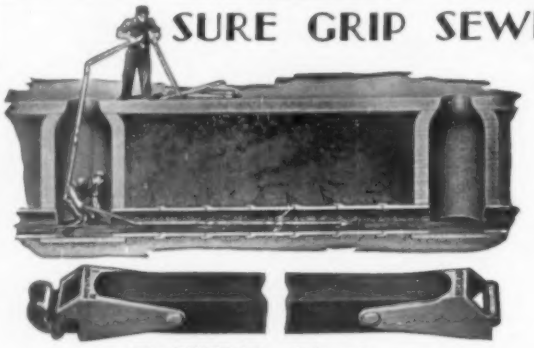

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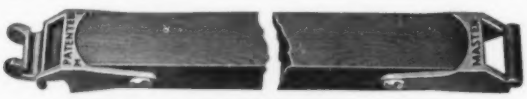

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NEWTON UPPER FALLS — MASSACHUSETTS

Public Employees Have No Right to Strike

Municipal Relations With Unions Representing Municipal Employees

By CHARLES S. RHYNE
Executive Director, National Institute of Municipal Law Officers

ON December 15, 1942, the National War Labor Board focused national attention on relations between municipalities and unions of municipal employees, when it issued a one-sentence decision holding that it had no jurisdiction over labor disputes between municipalities and municipal employees. The WLB said:

"After careful consideration of all the matters presented to the National War Labor Board at and in connection with the public hearings on December 9, 1942, the Board finds that it has no power under Executive Order No. 9017 to issue any directive order or regulation in these disputes governing the conduct of the state or municipal agencies involved."

The events immediately preceding this decision of WLB are of interest to all public officials, and a review of some of the basic considerations which resulted in this decision of WLB also deserves most careful consideration, as this matter is one of the most important to arise in the municipal field in recent years.

In the last few months labor unions have been advocating more complete unionization of public employees. The contention of the unions is that public employees are underpaid, and unionization similar to that in the industrial field offers the best way to bring pressure to bear for pay increases. The threatened transit strike in New York City and the street railway strike in Detroit, together with strikes of employees of various other municipalities throughout the country, have focused public attention on unionization of and strikes by public employees. The necessity of a comprehensive study of the problems in this field resulted in the preparation and publication by the National Institute of Municipal Law Officers of a report entitled "Power of Municipalities to Enter Into Labor Union Contracts —A Survey of Law and Experience." This report collects and reports in full the legal opinions of city attorneys, state attorneys-general, and similar legal material, as well as a comprehensive survey of the experience and ideas of 385 cities as reported by their city attorneys.

Conclusions

From the information reported herein the following conclusions seem to be inevitable:

1. No city has ever signed a collective bargaining agreement with a labor union representing city employees similar to the agreements entered into between private industry and labor unions.

2. Agreements have been signed between a few cities and representatives of labor unions of city employees containing general expressions of policy as to these city employees which contain no more than a declaration of policy or good will and good intention toward such employees.

3. Legal opinions of the courts, city attorneys and state attorneys-general are unanimous in their decisions that cities do not have the power to sign collective bargaining agreements with labor unions representing municipal employees for the following reasons:

A. Cities are creatures of limited powers, having only those powers specifically delegated by constitution, charter, and statute, and power to sign such collective bargaining agreements has not been expressly delegated to cities, except in a very limited way by the State of Washington.

B. Such agreements would be an unlawful and unauthorized delegation of public power to the union, a private organization, over which there is no public control.

C. By taking away municipal control over is employees, such agreements would, in effect, vest control of the municipal government in an unelected and uncontrolled private organization (the union) and take control from the head or heads of the municipal government who have been chosen by the public and whose conduct is regulated by law.

(1) Selection of employees is vested by law in city officials whose conduct and tenure is subject to approval and disapproval by the people via municipal elections. If unions select employees there is no control or check whatever on the union's action;

(2) Control of wages by the union would give control of the municipal tax rate to the union, as the city council could have nothing to say about the amount of future appropriations to meet the union's wage scale;

(3) City employees run the government, and the person or persons who control these employees control the government, so if a union contract is signed giving the union employee control, there would no longer be a need for elected public officials as their functions and purposes would be exercised by the union.

D. Such an agreement, if it contains a "closed shop" provision, discriminates between citizens in violation of the federal and state constitutions by preventing all citizens not belonging to the particular union holding the municipal labor contract from having an equal opportunity to obtain public employment. A "closed shop" is incompatible with the need of the public service for the most efficient employees obtainable as it substitutes the test of union membership for the usual tests of ability, education, efficiency, etc.

E. Civil service provisions of state constitutions, statutes and city charters would be nullified by such an agreement, as the agreement would supplant such civil service requirements with union control in direct violation of law.

(1) Thus a private uncontrolled organization, over which there is no public control, would render impotent and worthless the civil service system which has taken years to build up to its present status—civil service systems are designed to supplant the system whereby city employees paid private, uncontrolled, political organizations a part of their salary for their jobs.

(2) What is the difference in paying a private organization like a union, and a private organization like a political party so much per month for a city job? This analogy emphasizes the inherent difference in public service and private employment.

F. The declared public policy of the federal, state and municipal governments, as was so well expressed by the President of the United States, is opposed to collective bargaining agreements in public employment.

G. Federal legislation providing for collective bargaining for private industry employees expressly provides that the legislation does not apply to cities and their employees.

H. City employees have no right to strike to enforce collective bargaining agreements with the city.

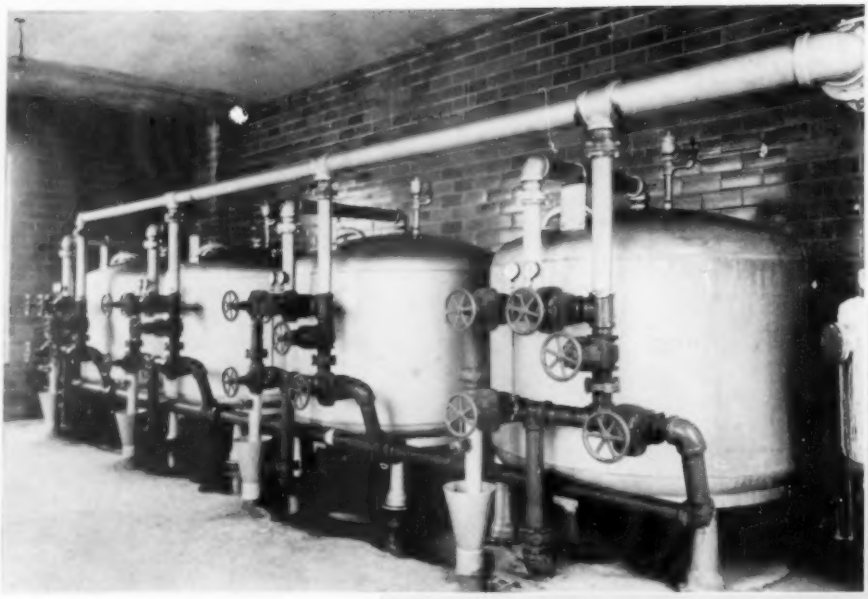
(1) No one has a right to participate in an insurrection against the people themselves as represented by the governments of cities.

(2) Public policy requires that the government always function without interruption as the public health and safety, and, in some instances, such as hospitals, police and fire services, the very lives of members of the public are at stake if essential services are interrupted.

(3) Laws regulating public service are designed to take care of all possible employee grievances in the fairest possible manner, thus making resort to a "strike" unnecessary.

(4) If these laws need amendment, public employees can petition the city council, the legislature or the Congress for relief.

4. Just as the inherent nature of the different modes of transportation by air and automobile make different legislative treatment to recognize these transportation differences necessary, so do the differences in the very nature of public and



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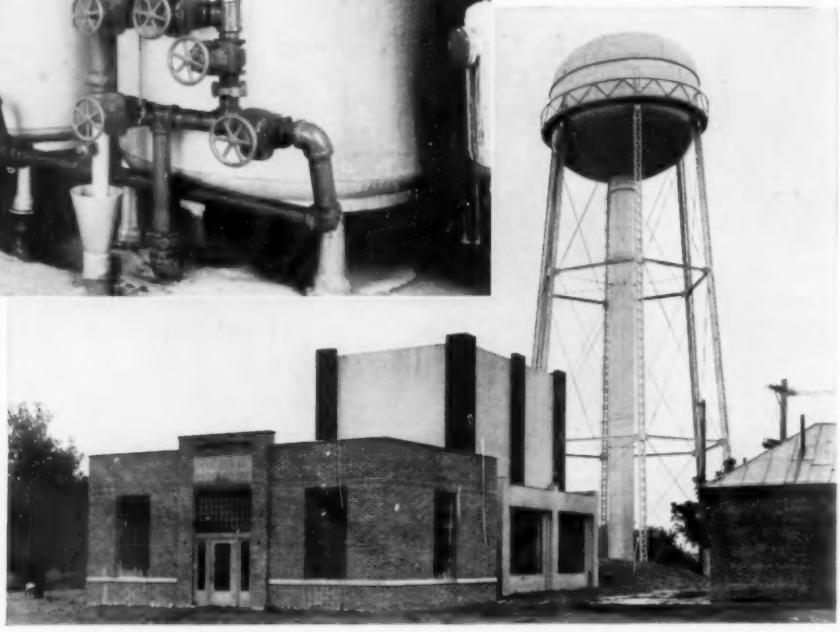

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private employment make different legislative treatment of such employments a necessity.

A. Federal legislation, state constitutions, state legislation, city charters, and city ordinances have always recognized these inherent differences in public and private employment, and no contract has yet been devised which eliminates these differences and makes these types of employment the same.

5. Federal, state and municipal officials are, almost without exception, very "pro-labor" and want to do everything possible for labor, but public policy and practical, legal, and other objections inherent in the very nature of public service simply make collective bargaining agreements between the government and unions representing the government's employees an impossibility.

6. Some city employees belong to labor unions and some city administrations discuss employee problems with labor union representatives just as they would talk with any other citizen interested in any other municipal problem. It is only when formal union recognition or a formal union contract is sought that the problems herein discussed arise.

History of the Newark Case

The war and the rapid growth in unionization of industry brought about under the National Labor Relations Act have caused labor unions to increase their efforts in the public field. The newest labor agency of the Federal Government, WLB, was at once looked to by the unions to furnish them some way to break down state and municipal legal barriers to labor union contracts with cities covering municipal employees. On March 3, 1942, WLB declined to take jurisdiction in a labor dispute between the city of Newark, N. J., and a local union affiliated with the CIO (*7 Municipal Law Journal 45*). The interest of WLB in this particular dispute did not end with this first ruling, however, and the decision of WLB on December 15, referred to above, is merely a further event in the Board's continued interest in the Newark case.

On October 1, 1942, the Newark union called a strike, and the Governor of New Jersey suggested to WLB that it review the Newark situation. As a result of the Governor's request, WLB appointed a panel of three to investigate the strike. The panel held a closed hearing in the case and considered the city's contention that WLB had no jurisdiction over labor disputes between cities and city employees. The panel then voted 2 to 1 to recommend to WLB that it take jurisdiction of the Newark dispute and order the city to enter into a collective bargaining agreement with the CIO union.

Hearing Before WLB

The city of Newark requested that WLB grant a public hearing on this recommendation of the panel. The city of New York was invited to participate in the hearing by WLB, in view of the pending dispute in that city with the transit worker's union. New York City declined to participate, but the Omaha Metropolitan Utilities District requested that it be allowed to consolidate its case with that of Newark and the request was granted. The Newark, New York, and Omaha cases were argued before WLB at a public hearing in Washington, D. C., on December 9, 1942, and it is this hearing which is referred to in WLB's decision of December 15. At this hearing a brief and oral arguments were also presented by a committee representing the 337 member cities of the National Institute of Municipal Law Officers. This committee was composed of the following: Raymond Schroeder, Corporation Counsel of Newark, N. J., Chairman; William E. Kemp, City Counselor of Kansas City, Mo.; F. Murray Benson, City Solicitor of Baltimore, Md.; Dana Van Dusen, General Counsel, Omaha Metropolitan Utilities District, Omaha, Nebr.; J. C. Murphy, Assistant City Attorney of Atlanta, Ga.; and John E. McCall, City Attorney of Torrance, Calif. The committee was also assisted by Charles B. Forsyth, Corporation Counsel of Rochester, N. Y. The committee's brief upon which it based its oral argument follows:

National Institute Committee's Brief

Now comes the National Institute of Municipal Law Officers, an organization of 337 municipalities, and respectfully urges that the National War Labor Board enter an order or ruling holding that the Board has no jurisdiction over labor disputes between municipalities and municipal employees for the following reasons:

1. The War Labor Board was not given authority over disputes between municipalities and unions of municipal employees by Executive Order 9017, as that Order limited the Board's jurisdiction to such disputes in private industry.

2. The Wage Stabilization Amendment to the Emergency Price Control Act of 1942 does not purport to confer jurisdiction over labor disputes but covers only wages and salaries and specifically provides in Section 4 that the Congress did not intend to interfere with the jurisdiction over labor disputes conferred in the National Labor Relations Act or the jurisdiction conferred in the Fair Labor Standards Act.

3. The National Labor Relations and the Fair Labor Standards Acts specifically exempt municipalities and municipal employees from their regulations and Section 4 of the Wage Stabilization Amendment provides that nothing inconsistent with those two Acts may be done under this Amendment, thereby expressing the intent of the Congress to carry the specific exemption of municipalities forward into this Amendment.

4. Section 2 of the Wage Stabilization Amendment provides that all authority conferred by the Amendment shall be exercised by the President of the United States with this specific limitation: ". . . but he may not under the authority of this Act suspend any other law or part thereof." The word "law" includes both federal and state laws.

A. All municipalities act under authority of "laws" and all relations between municipalities and municipal employees are governed by "law," and any order of the War Labor Board to any municipality with reference to any labor dispute with municipal employees would be an order nullifying a state law, so under the specific language of the Amendment the President could not assume jurisdiction over such labor disputes (nor has he done so, as will be pointed out hereinafter).

5. Executive Order 9250 giving the War Labor Board certain jurisdiction over wages and salaries and the Amendments thereto, does not give or purport to give the Board jurisdiction over labor disputes between municipalities and municipal employees.

6. On December 2-4, 1942, the National Institute of Municipal Law Officers held a War Conference in New York City, which was attended by over 400 attorneys for municipalities representing cities from throughout the nation. This Conference gave extended consideration to the question now before this Honorable Board and after discussing all of the problems involved, a resolution was adopted embodying the consensus of opinion of those present at this War Conference. [This resolution denounced the "attempt of the panel of the War Labor Board to destroy the integrity and independence of local government in the United States, and expressed the unalterable opposition of the Institute to such unwarranted assertion of the power of federal agencies over the affairs of municipalities," and resolved that a copy of the resolution be sent to the President of the United States, the Vice-President of the United States, the Director of Economic Stabilization, and to each member of the War Labor Board and to each member of the Congress of the United States.]

7. The Institute's pamphlet entitled "Power of Municipalities to Enter Into Labor Union Contracts—A Survey of Law and Experience" demonstrates conclusively in the conclusions given on pages 23-24, that municipalities have no legal authority to enter into contracts delegating municipal control over municipal employees to labor unions, since control of municipal employees is a public function vested in elected municipal officials and cannot be delegated away by such officials.

"This committee therefore respectfully requests that this Honorable Board enter an order holding that the Board has no jurisdiction over labor disputes between municipalities and municipal employees."

Present Status

The present status of this matter is, therefore, that the conclusions expressed in Report No. 76 of the National Institute of Municipal Law Officers still state the picture as it exists today.

EDITORIAL NOTE.—*See also discussion of "City Hall, Stukes, and Collective Bargaining," by Phillips Bradley, page 73 of this issue.*

The foregoing article takes the place this month of the regular department of "Municipal Law Notes and Decisions," conducted for THE AMERICAN CITY by Mr. Rhyne as Executive Director of the National Institute of Municipal Law Officers.

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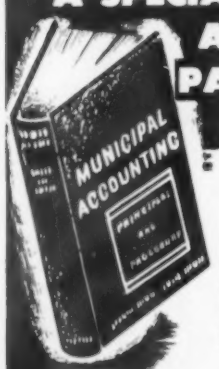

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Letters and Items of Interest

General Program of Mutual Fire Aid

THE Office of Civilian Defense has compiled a "Report From the Regions on Laws Affecting Mutal Aid and Firemen's Compensation." This information, furnished at the request of Director Landis of OCD, marks the first step in the development of mutual aid legislation in all states not now having such laws. A suggested Fire Mobilization Act adopted by the Conference of Governors, also is available.

Both the report and the suggested act will be placed in the hands of the governors and attorney-generals of all states. Copies also will be located in the files of each of the nine Regional Offices of OCD, as well as being placed in the hands of all state fire coordinators and administrators. A supplement to this report, in preparation, will include data from the states not covered in this initial report as well as an outline of pending legislation.

The mutual aid program is being developed through the nine OCD offices, under the direction of Chief Roi B. Woolley, Chief, Coordination Unit, Fire Defense Section, Protection Branch.

JACK W. MASON,
Acting Chief, Fire Defense Section, OCD, Washington, D. C.

Grand Haven Adopts Municipal Retirement System

ON November 3, 1942, the citizens of Grand Haven, Mich., approved by a three-fifths vote a charter amendment to provide for a retirement or pension system for municipal employees.

This action was the result of the study of a committee appointed by the Mayor in 1941, which included the City Manager and Superintendent of the Board of Public Works. The committee reviewed various plans for about a year, later employing A. G. Gabriel, Actuarial Consultant, to aid in working out details. Mr. Gabriel is also consulting actuary for the employees' retirement system in the City of Detroit.

The retirement plan was voluntarily instituted by the Mayor, Council and Board of Public Works, and was not the result of pressure brought by the employees.

A pamphlet outlining the plan, and a set of questions and answers which were given to the employees for their information, are available for readers of THE AMERICAN CITY on application.

J. BRYAN SIMS,
Superintendent, Board of Public Works.

Townsfolk Turn Mill Into Community Hall

IT took the Rockton, Wis., Community Club six years to get a town hall. After a lot of effort they finally bought an old grist mill which had closed in 1917 and have remodeled it into a hall which is serving the interests of the whole community.

Community Hall, Rockton, Wis.

The club, organized six years ago by Miss Evelyn McCoy (now Mrs. Glen Shaker, of Hillsboro), a teacher in a local school, has grown in membership and today includes most of the people in the area, all of whom are interested in the project.

When one stops to consider that Rockton has only about 100 population, the job of establishing a community building seems quite difficult. The Rockton club began holding an annual homecoming picnic, a raffle or two, and also asked for cash donations. Soon they discovered that they had enough money to buy half a lot right in the middle of the village.

At that time, the family that owned the old grist mill got interested in the hall idea and offered to donate the old grist mill to the club. The offer was accepted, and club members then tore down the mill, salvaged the material, hauled it to the community lot, and began building the new edifice.

All members of the club donated their services to the project in the manner of the old fashioned barn-raising bees. There were a few carpenters as members of the club and a lot of other men who could use a hammer and nails, and it was no time until the club had the town hall erected.

Human Planning

"Everywhere democracy is challenged. A totalitarian state does not demand high intellectual or spiritual standards from its people; on the contrary it can only function successfully when they cease to think for themselves and are willing to obey the command to worship false gods. But a democratic state can only flourish if the level of intelligence of the community is high and its spiritual life dynamic."

TOM HARRISON
(in *The New Statesman and Nation*)

The Municipal Bond Market

Some recent sales of new issues as reported in December issues of *The Bond Buyer*:

Amount	Borrower and Purpose	Rate (%)	Term (Years)	Basis (%)
$600,000	Allentown, Pa., Funding and Improvement	1.25	1-20 Ser.	1.205
139,000	Medford, Ore., Refunding	1.25	4 Avg.	1.236
550,000	Chicago, Ill., Refunding	1.25	5	1.25
100,000	Chelsea, Mass., Relief	1.25	1-10 Ser.	1.366
216,000	Hempstead, N. Y., Parking Place	1.50	5.66 Avg.	1.41
147,679	Cortland, N. Y., General Town	1.50	3.50 Avg.	1.41
2,600,000	Rochester, N. Y., Refunding	1.50	9.25 Avg.	1.473
350,000	Suffolk Co., N. Y., General Refunding	1.5	12.16 Avg.	1.48
3,140,000	Richmond, Va., Public Improvement	1.5	1-20 Ser.	1.552
126,237	Peekskill, N. Y., General	1.70	9.66 Avg.	1.68
142,500	Kearney, N. J., General Improvement	1.80	8.33 Avg.	1.78
205,000	Irvington, N. J., Refunding and General Improvement	2.0	10.25 Avg.	1.887
133,000	Princeton, N. J., School	4.25	19-25 Ser.	2.08
100,000	Harrison, N. Y., Refunding	2.50	7 Avg.	2.28
152,000	Iredell Co., N. C., Refunding Road and Bridge	2.5	23.5 Avg.	2.49
320,000	Cuyahoga Co., Ohio, Delinquent Tax Notes	2.75	2.50 Avg.	2.63
424,000	Hudson Co., N. J., Maternity Hospital and Nurses' Home, Fourth Series	2.75	13.85 Avg.	2.71
717,000	Longview, Wash., Water Revenue	2.75	5-18 O.-A.	2.78
252,000	Marion Co., Fla., Refunding Road	2.50	10-17 Opt.	2.84
142,000	Perkins Co., S. D., Refunding	3.0	1-10.85 O.-A.	3.0
385,000	Fairview, N. J., General Refunding	3.30	10.50 Avg.	3.276
172,000	Cliffside Park, N. J., Refunding	4.25	11.16 Avg.	4.25

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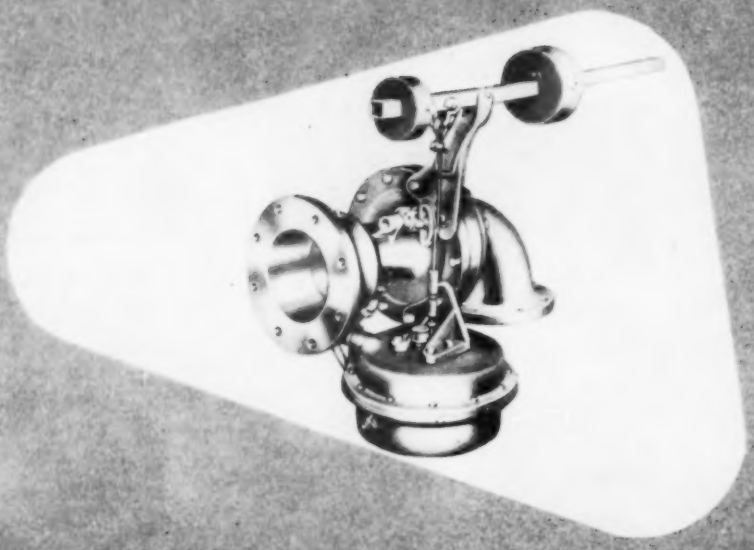

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Police Personnel Problems

Selective Service and Other Wartime Personnel Problems.—Bulletin on Police Problems, No. 3, International Association of Chiefs of Police, Washington, D. C. 1942. 15 *pp.*, $1.00.

Special transcript of discussion on police personnel problems arising from the war and Selective Service Act, intended to aid law enforcement executives to secure more favorable consideration by local draft boards for deferment of essential men, alteration of standards for new recruits, and definition of policies by federal officials.

Democracy and Race Prejudice

Color—Unfinished Business of Democracy.—Survey Graphic, November 1942. 123 *pp.* 50c.

This special number of the Survey Graphic contains a series of richly illustrated articles by key people, colored and white, written around the challenge which is presented to democracy by the existence of racial intolerance and discrimination because of color. The first part presents a picture of the Negro in American life and his role in the war. The second part tells us of the progress and accomplishments, hopes and aspirations of the colored peoples of the whole world and holds out a warning of the defeat we may suffer through our race prejudices and a promise of the victory we can win if we overcome them.

Post-War Planning

After the War?—by Maxwell S. Stewart. Public Affairs Committee, 30 Rockefeller Plaza, New York, N. Y. 1942. 32 *pp.* 10c.

Popular general summary of the problems of post-war planning and reconstruction. Emphasizes both the need for planning so that freedom from want shall become a reality and also the need for thinking in world terms in peace as well as in war.

Heroic Mayor

A New Code for Mayors.—Published and Distributed for the Belgian Information Center by Duell, Sloan and Pearce, Inc., N. Y. 1942. 32 *pages.* 50c.

A short book built around the proclamation issued by the heroic Mayor of Brussels in June 1940 when he was about to be arrested by the Nazis for his refusal to cooperate.

Aviation and the Future

Winged America.—Building America Series, The Society for Curriculum Study, 2 W. 45th St., New York. 1942. 63 *pp.* 30c.

Dramatically presented and vividly illustrated story of aviation and its future. Describes not only the important role played by the airplane at present but also the way in which it will revolutionize future transportation, influence economic, social, and community life, make necessary the acquisition of new skills, and introduce an era of global thinking and living.

Library Service

Americans Want to Read.—by Dorothea F. Hyle. Social Action Pamphlets, 289 Fourth Ave., New York. 1942. 39 *pp.* 15c.

Enthusiastic description of the history of America's libraries and of the essential educational services which libraries perform both in war and peace. Makes recommendations as to how people may work together to obtain better legislation and better financial support for public libraries, and a more even distribution of library services for their own communities.

The Municipal Index

The Municipal Index—the municipal officials' buying guide, published by The American City Magazine Corporation, 470 Fourth Acenue, New York, N. Y., 1943. *Eighteenth annual edition.* 555 *pp.* $5.00.

Both the carefully schemed out editorial artciles and the advertisements are geared to what can be done by municipal government departments now. For instance, the Water Supply and Purification Section opens with "How to Obtain Pumps Today," and 25 manufacturers advertise 28 different types of pumps from backpack to centrifugal, turbine well, rotary and reciprocating for any conditions, head and capacity. If it's pipe you want, eleven types are described by the manufacturers.

Every municipal official concerned with planning, specifying, and purchasing will find in this volume not only hints and helps but specific data with which to work out his plans. Newly elected officials and newly appointed department heads should start the year propitiously by seeing that they and their assistants are equipped with a copy of the new MUNICIPAL INDEX.

Highway Development

Second Short Course on Highway Development.—Ohio State University, Columbus, Ohio. 1942. 44 *pp., mimeo.*

Speeches made at the February 1942 sessions of the Second Short Course on Highway Development. Various factors contributing to the completed highway and its environs are discussed and the necessity is emphasized of producing highways which meet the needs of the nation at this time and in the future.

City Attorneys

Attorneys for Municipalities, Municipal Agencies, Officers and Employees—Their Employment, Duties, Powers, Official Status and Compensation As Defined By Court Decisions. —Prepared by Charles S. Rhyne, Executive Director, National Institute of Municipal Law Officers, 730 Jackson Place, Washington, D. C. 1942. 33 *pp.* $2.00.

Report supplementing the practical information collected about City Attorneys and Municipal Law Departments in Report No. 67 of the National Institute which was published in Oct., 1940. This study, which makes detailed reference to the pertinent court decisions, aims to clarify the position of the city attorney and was prepared in the hope of helping both attorneys and other city officials to solve problems which may arise between municipalities and the attorneys performing important legal services for the city.

International Public Works

International Economic Development—Public Works and Other Problems.—by Lewis L. Lorwin. U. S. Government Printing Office, Washington, D. C. Apply to Supt. of Documents, Washington, D. C. 1942. *iv* + 93 *pp.*

A well-organized, clearly written report dealing with the idea that international public works and developmental projects may be used more systematically as a means of combatting industrial depression and as a method of increasing employment through the development of the economic resources of underdeveloped countries and regions. It traces the economic background of this idea, describes the methods by which it has been applied in practice, analyzes its further possibilities for economic stabilization and development, and discusses its implications for the post-war economic policy of the United States.

Wartime Role of Cities

Municipal Government and the War.—The American Municipal Association, 1313 E. 60th St., Chicago, Ill. 1942. *v* + 101 *pp., offset,* $1.00.

Proceedings of the conference of the American Municipal Association, held in Chicago in October. The theme of the speeches and the discussion was the two-fold responsibility of the municipality in wartime—namely, the total mobilization of citizen participation and planning for the post-war era. Material presented dealt with the role of cities in regard to such subjects as civilian defense, economic stabilization, emergency legislative needs, wartime housing, social protection services, and plans for rebuilding.

Orientation of Buildings and Streets

A List of References on Orientation of Buildings and Streets.—Compiled in the Library of the Departments of Landscape Architecture and Regional Planning, Harvard University, by Katherine McNamara, Librarian. 1942. 4 *pp., mimeo.*

Annotated bibliography consisting of 53 references dealing with the question of building, with regard to light, air, and sunshine.

Federal Government

United States Government Manual, Fall, 1942.—*Bureau of Public Inquiries, Office of War Information, Washington, D. C. Apply to Superintendent of Documents, Washington, D. C.* 705 *pp.* $1.00.

Latest revised edition of this manual, giving information on the organization and personnel of official and quasi-official agencies and departments of the Federal Government (including the emergency war agencies under the Executive Branch), with organization charts and lists of commonly used abbreviations, abolished and transferred agencies and functions, and publications of the various departments.

Schools in Wartime

All the Children.—Forty-Third Report of the Superintendent of Schools, City of New York. 1942. 88 *pp.*

The keynote of this attractively illustrated report is the effect of the war on the curriculum and activities of the New York City Schools. An unusual feature is the description of a typical day in school, written around the experiences of a typical boy and a typical girl from the elementary, junior high, senior academic high, and vocational high schools.

Wartime Transportation Problems

Meeting Wartime Demands for Passenger Transportation in the New York-New Jersey Metropolitan Area.—Regional Plan Bulletin, Regional Plan Association, Inc., 400 Madison Ave., New York. 1942. 16 *pp.* 25c.

Summary of the changed passenger transportation requirements in the New York-New Jersey area brought on by wartime demands, of the powers and accomplishments of federal, state, and local agencies, and of the progress being made through the various conservation programs. Urges prompt action along the line of detailed surveys and plans for critical areas on a regional basis.

Tractor Manual

Service Manual, Model "M."—Allis-Chalmers Tractor Division, Milwaukee, Wis. 1942. *xii* + 143 *pp.* $1.00.

Simply written and amply illustrated manual, designed to aid mechanics in the care, maintenance and operation of the Allis-Chalmers Model "M" gasoline-powered tractor.

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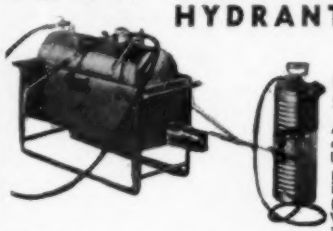

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Purifying Water Supplies

Water Treatment with Limestone.—by C. H. Connell, P. J. A. Zeller, J. H. Sorrels. Bulletin of the Agricultural and Mechanical College of Texas, Dec. 15, 1942. 71 pp.

Description of laboratory and field experiments made to find simpler and less expensive methods for the removal of carbon dioxide, iron, and manganese from water supplies. Results indicated that suitable powdered limestone may be applied by dry feed to rapid sand filter plants for correction of corrosion.

Appraising Housing Quality

A Yardstick for Health Deficiencies of Slum Dwellings and Their Environment.—Prepared for the Committee on the Hygiene of Housing, American Public Health Association by Allan A. Twichell, Technical Secretary, and Anatole Solow, Research Associate. 4 pp. folder, offset.

Folder illustrating a new method of measuring, from the public health point of view, the dwelling and neighborhood deficiencies of slums—a method of appraisal which is intended to aid public officials in formulating remedial programs for such areas.

War Housing Regulations

War Housing Manual, Including War Housing Critical List and Procedures for Processing Applications.—Issued by Housing Branch, Construction Bureau, War Production Board. 1942. v + 38 pp.

Manual intended to clarify procedures in the minds of those sponsoring, financing, constructing, and furnishing materials for war housing projects.

Personnel Administration

Municipal Personnel Administration.—Published for the Institute for Training in Municipal Administration by The International City Managers' Association, 1313 E. 60th St., Chicago, Ill. Third Edition, 1942. xii + 429 pp., offset. $7.50.

Practical, realistic text designed to give general municipal administrators and personnel officers a guide to the development of a workable personnel program. Gives a general statement of the personnel problem, discusses the question of organization for personnel administration, and deals with the problems of position-classification, salary and wage standardization, recruitment and selection, employee training, promotion and transfer, employee evaluation and service ratings, morale and conditions of employment, discipline, employee relations, and retirement systems. Special administrative problems are considered, and guideposts for the constructive development of personnel administration are outlined. All chapters in this Third Edition have been thoroughly revised and several have been rewritten, while a number of new sections have been added.

Importance of Small Community

The Small Community.—by Arthur E. Morgan, President, Community Service, Inc. Harper and Brothers, New York and London. 1942. xii + 312 pp. $3.00 from THE AMERICAN CITY.

The underlying theme of this book is the importance of preserving and perfecting the small community or primary group—the unit in which, according to the author, men must live if they would have the good life. The author's purpose is to define the small community and to instruct us on how to achieve it. Part One discusses the significance of the community and Part Two its organization. Part Three takes up specific community interests, such as government and public relations, health, cultural and social life, etc.; and in the concluding observations of Part Four the small community is seen as the best place for pioneering in social progress and for the promotion of tolerance and freedom.

Wartime Legal Problems of Cities

One Year's Experience of American Cities at War.—National Institute of Municipal Law Officers, 730 Jackson Place, N. W., Washington, D. C. 1942. 104 pp. $3.00.

Long report by the Committee on Wartime Legal Problems of Cities presented to the War Conference of the National Institute of Municipal Law Officers in New York in December, 1942. Purpose was to collect the wartime experiences of the heads of municipal law offices throughout the nation and attempt to disseminate information gleaned therefrom for the assistance of cities in solving critical wartime problems. Reviews and discusses problems of civilian defense, municipal personnel, revenue and finance, the use of money, facilities, property, and services for federal war purposes, housing, transportation, relation of municipalities to federal war measures and to army and navy personnel, pointing the need for a continuous interpretation and expansion of municipal legal powers. (See page 46 of this issue.)

Protection of Children in War

Civil Defense Measures for the Protection of Children.—by Martha Eliot, M. D., Associate Chief, Children's Bureau, United States Department of Labor. United States Government Printing Office, Washington, D. C. 1942. xii + 186 pp. 30c.

Report of observations made in Great Britain in February 1941, covering, first, the protection of children in areas under bombardment and second, the program of evacuation of children to areas of relative safety. Reviews the steps taken by Government to accomplish these purposes and of some of the kinds of assistance rendered to it by voluntary groups. Concludes that advance preparation for maternity care and protection of children is essential in a civil-defense program for the United States, and gives specific recommendations for carrying this into effect.

San Francisco Regional Planning

Should There Be an Area Planning Body for the San Francisco Bay Region?—The Commonwealth (official journal of the Commonwealth Club of California), October 26, 1942. 29 pp. 25c.

Condensation of papers and discussion which followed presentation of a report, made by the Commonwealth Club's section on City Planning in March 1942, on the question of whether some sort of coordination might be achieved to promote greater efficiency and convenience for San Francisco Bay region residents.

Los Angeles Transportation Plan

Mass Tarnsit Facilities and The Master Plan of Parkways.—by Milton Breivogel, Principal City Planner, Los Angeles, and Stuart M. Bate, Transportation Consultant. City Planning Commisison, Los Angeles, Calif. 1942. 26 pp.

A detailed progress report which concludes that no complete plan could be made at this time for the comprehensive coordination of the mass transportation system and the parkway system of Los Angeles, and recommends that as each parkway route is developed proper consideration be given to the coordination of that facility with the paralleling mass transit routes. Numerous maps and charts.

Chicago Ordinances and Code

The following important ordinances and code adopted during 1942 are obtainable from Frederick Rex, Municipal Reference Librarian, City Hall, Chicago, Ill.

Comprehensive Amendment of Chicago Zoning Ordinance.

Ordinance Prescribing Construction Requirements for New Dwellings in Defense Districts.

Ordinance Providing for a Comprehensive Unified Local Transportation System.

Chapters of the Municipal Code of Chicago Relating to The Care of Foods and Food Establishments, Bakeries, and Milk and Milk Products.—Revised and Edited by Barnet Hodes, Corporation Counsel. 1942. 74 pp. 25c.

Urban Studies Bulletins

The Division of Urban Studies of the National Housing Agency, Washington, D. C., is issuing in mimeographed form a series of Bulletins which are available for readers of THE AMERICAN CITY without charge. Those already issued are:

No. 1—War Housing and Transportation

No. 2—The Radford, Virginia, Housing and Transportation Plan

No. 3—Program Planning for Baltimore, Md., Locality

No. 4—Bibliography on Post-War Housing and Urban Development

No. 5—The Baruch Report on Rubber

No. 6—Zoning in Relation to the Homes Utilization Program

No. 6 (Supplement No. 1)—Specific Cases of Zoning Administration and Amendment to Meet Social Situations

The Division of Urban Studies has also put out in mimeographed form abstracts of Selected Material on Post-War Housing and Urban Redevelopment.

Research and Post-War Planning

Survey of Agencies (five parts) and Bibliography (five parts). United Nations Information Office, 610 Fifth Avenue, New York. 1941-42. Mimeo. Price of each part ranges from 60c to $1.00.

This series of mimeographed surveys covers 68 non-official agencies in the United States interested in research in post-war planning and reconstruction. The bibliographical lists include books, pamphlets, reports, documents, and magazine articles on war and post-war planning from domestic and foreign periodicals, covering approximately the period from January 1940 to April 1942.

Annual Accident Statistics

Accident Facts.—National Safety Council, Inc., 20 N. Wacker Drive, Chicago, Ill. 1942. 112 pp. 50c.

Attractive pamphlet issued annually, which is meant to serve two purposes—to present vividly, by text and illustration, the salient characteristics of the last year's national accident experience, and to provide tables that serve as a year-round reference for detailed statistics.

Other Reports Received

CHATTANOOGA, TENN.—Auditor's Report, City of Chattanooga, Tenn., for the period from October 1, 1940, to June 30, 1942. 142 pp., offset.

DETROIT, MICH.—Annual Report by the Auditor General of the City of Detroit, Mich., for the fiscal year ended June 30, 1942. 143 pp., offset.

EASTON, PA.—Fifty-Fifth Annual Report, for the Fiscal Year 1941. 46 pp.

MARYLAND.—Supplementary Report on Roadside Control. Research Report No. 20, submitted by Carl N. Everstine, Research Division, Legislative Council of Maryland. 1942. iv + 24 pp., mimeo.

—Supplementary Report on Local Legislation. Research Report No. 21, submitted by Carl N. Everstine, Research Division, Legislative Council of Maryland. 1942. iv + 18 pp., mimeo.

MICHIGAN.—State Aid in Michigan. Michigan Pamphlets, No. 18, Bureau of Government, University of Michigan. 1942. 34 pp.

PASADENA.—Pertinent Facts About Pasadena's Health Department. 1942. 25 pp., mimeo.

PULASKI COUNTY, ARK.—Public Works. Pulaski County Planning Board. 1942. 39 pp.

SAN MATEO COUNTY, CALIF.—Planned Public Works. San Mateo County Planning Commission. 1942. 29 pp., offset.

TRENTON, N. J.—Annual Report of Comptroller of the City of Trenton, N. J., for year ending December 31, 1941. Issued by Department of Revenue and Finance. 1942. 93 pp.

BULLETS WON'T STOP 'EM—

BUT HTH WILL!

AMONG the deadliest enemies of U. S. troops are *water-borne diseases*. Invisible killers — whose "combat divisions" run into the billions! They spread typhoid, dysentery and other epidemics that can cripple or wipe out an entire army. But thanks to the skill and industry of the Medical Intelligence Division of the United States Army, our troops can take the field well prepared to combat these unseen assassins.

Potent weapon in the battle against bacteria is Mathieson HTH and other dry chlorine carriers. These quick-acting bactericides are the active sanitation principle employed by the Army's portable water purification units. When added to water, they release germ-killing chlorine — making the water safe to drink!

HTH is also used to purify drinking water at training centers and other military establishments. Additional quantities of HTH are required to flush water mains before they are put into use . . . and to render the disposal of sewage safe and sanitary.

U. S. Army portable water purification unit in action on the bank of a stream. In the circle, at the left of the chlorinator, a 5-lb. can of Mathieson HTH "in service"! (Photo #130812, U. S. Army Signal Corps).

As a result of its importance in safeguarding the health of our armed forces, the distribution of calcium hypochlorite is now rigidly controlled by the W. P. B. That means Mathieson must give our armed services first call on available supplies. But it also means that the U. S. isn't taking any chances with disease germs — the greatest leveller of armies the world has ever known!

THE Mathieson Alkali Works (INC)

60 E. 42ND ST., NEW YORK, N. Y.

LIQUID CHLORINE . . . HTH . . . SODA ASH . . . CAUSTIC SODA . . . BLEACHING POWDER . . . AMMONIA, ANHYDROUS and AQUA . . . BICARBONATE OF SODA . . . PH-PLUS (FUSED ALKALI) . . . DRY ICE . . . CARBONIC GAS . . . SYNTHETIC SALT CAKE . . . SODIUM CHLORITE PRODUCTS

Buy War Bonds and Stamps. Help win the war for FREEDOM.

Conventions—When and Where

Jan. 20-22—New York, N. Y.
AMERICAN SOCIETY OF CIVIL ENGINEERS. Annual Meeting. (Engineering Societies Building) Sec., George T. Seabury, 33 W. 39th St., New York, N. Y.

Jan. 22—New York, N. Y.
NEW YORK STATE SEWAGE WORKS ASSOCIATION. (Hotel McAlpin) Sec.-Treas., A. S. Bedell, State Dept. of Health, Albany, N. Y.

Jan. 22-25—New York, N. Y.
AMERICAN INSTITUTE OF PLANNERS. Annual Meeting. (Hotel Pennsylvania) Exec. Sec., Barbara Terrett, 1313 E. 60th St., Chicago, Ill.

Jan. 25-26—New York, N. Y.
AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS. Annual Meeting. Corresponding Sec., Bradford Williams, 9 Park St., Boston, Mass.

Jan. 25-27—Lafayette, Ind.
PURDUE ROAD SCHOOL. Annual Meeting. (Memorial Union Building, Purdue University) Sec., Ben G. Petty, Engineering Extension Dept., Purdue University, Lafayette, Ind.

Feb. 10-12—Ann Arbor, Mich.
CONFERENCE ON HIGHWAY ENGINEERING. Annual Conference. (Michigan Union) Sec., R. L. Morrison, University of Michigan, Ann Arbor, Mich.

Feb. 17-18—Chicago, Ill.
AMERICAN CONCRETE PIPE ASSOCIATION. Annual Convention. (Hotel Drake) Sec., M. W. Loving, 33 W. Grand Ave., Chicago, Ill.

Feb. 17-18—Chattanooga, Tenn.
SOUTHEASTERN ASSOCIATION OF STATE HIGHWAY OFFICIALS. (Hotel Patten) Sec.-Treas., Berrien W. Davis, State Maintenance Engineer, Raleigh, N. C.

Feb. 17-19—New York, N. Y.
ASSOCIATION OF HIGHWAY OFFICIALS OF NORTH ATLANTIC STATES. Highway Problems Conference. (Hotel Pennsylvania) Sec.-Treas., A. Lee Grover, State Highway Dept., Trenton, N. J.

***Feb. 25-27—Harrisburg, Pa.**
PENNSYLVANIA STATE ASSOCIATION OF BOROUGHS. (Penn Harris Hotel) Pres., Thomas F. Chrostwaite, Hanover, Pa.

Feb. 26-Mar. 2—St. Louis, Mo.
AMERICAN ASSOCIATION OF SCHOOL ADMINISTRATORS. Annual Convention. (Municipal Auditorium) Sec., S. D. Shankland, 1201 16th St., N. W., Washington, D. C.

Feb. (Date Later)—College Station, Texas
TEXAS WATER WORKS AND SEWERAGE SHORT SCHOOL. (A & M College) Sec., V. M. Ehlers, Austin, Texas.

***Mar. 12-15—Minneapolis, Minn.**
AMERICAN WATER WORKS ASSOCIATION—MINNESOTA SECTION. Annual Conference. (Nicollet Hotel) Sec.-Treas., Ronald M. Finch, Wallace & Tiernan Co., Inc., 416 Flour Exchange, Minneapolis, Minn.

***Mar. (Date Later)—New Orleans, La.**
LOUISIANA MUNICIPAL ASSOCIATION. Sixth Annual Convention. Sec.-Treas., Mrs. Henry Jastremski, City Hall, North Blvd., Baton Rouge, La.

Mar. (Date Later)—Trenton, N. J.
NEW JERSEY SEWAGE WORKS ASSOCIATION. (Stacy-Trent Hotel) Sec., John R. Downes, Plainfield, N. J.

Apr. 7-9—Hamilton, Ont.
AMERICAN WATER WORKS ASSOCIATION—CANADIAN SECTION. (Royal Connaught Hotel) Sec., Dr. A. E. Berry, Ontario Dept. of Health, Parliament Buildings, Toronto, Ont.

Apr. 23-24—Excelsior Springs, Mo.
MISSOURI ASSOCIATION OF PUBLIC UTILITIES. Annual Meeting. (Hotel Elius) Asst. Sec., Jesse Blythe, 101 W. High St., Jefferson City, Mo.

***Apr. 26-28—Davenport, Iowa**
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS. Spring Meeting. Asst. Sec., Ernest Hartford, 29 W. 39th St., New York, N. Y.

***May 7-8—Bellingham, Wash.**
AMERICAN WATER WORKS ASSOCIATION—PACIFIC NORTHWEST SECTION. (Hotel Leopold) Sec., Fred Merryfield, Oregon State College, Corvallis, Ore.

May 10—Chicago, Ill.
NATIONAL FIRE PROTECTION ASSOCIATION. Annual Meeting. (Palmer House) M'ng Dir., Percy Bugbee, 60 Batterymarch St., Boston, Mass.

WEEK OF MAY 16—NEW YORK, N. Y.
NATIONAL CONFERENCE ON PLANNING AND HOUSING. Joint annual meeting of American Society of Planning Officials and National Association of Housing Officials. (Hotel Pennsylvania) Walter H. Blucher, Exec. Dir., ASPO; Hugh Pomeroy, Exec. Dir., NAHO, 1313 East 60th Street, Chicago, Ill.

May 21-23—Cleveland, Ohio
COMMUNITY CHESTS AND COUNCILS, INC. Annual Meeting. (Hotel Cleveland) Exec. Vice-Pres., Allen T. Burns, 155 East 44th St., New York, N. Y.

***June 8-11—Pittsburgh, Pa.**
SMOKE PREVENTION ASSOCIATION. Annual Meeting. (William Penn Hotel) Sec., Frank A. Chambers, 139 North Clark St., Chicago, Ill.

***June 14-16—Los Angeles, Cal.**
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS. Semi-Annual Meeting. Exec. Asst. Sec., Ernest Hartford, 29 W. 39th St., New York, N. Y.

***June 14-17—Cleveland, Ohio**
AMERICAN WATER WORKS ASSOCIATION. Conference on War Winning Water Works Operations. (Carter and Statler Hotels) Sec., Harry E. Jordan, 22 E. 40th St., New York, N. Y.

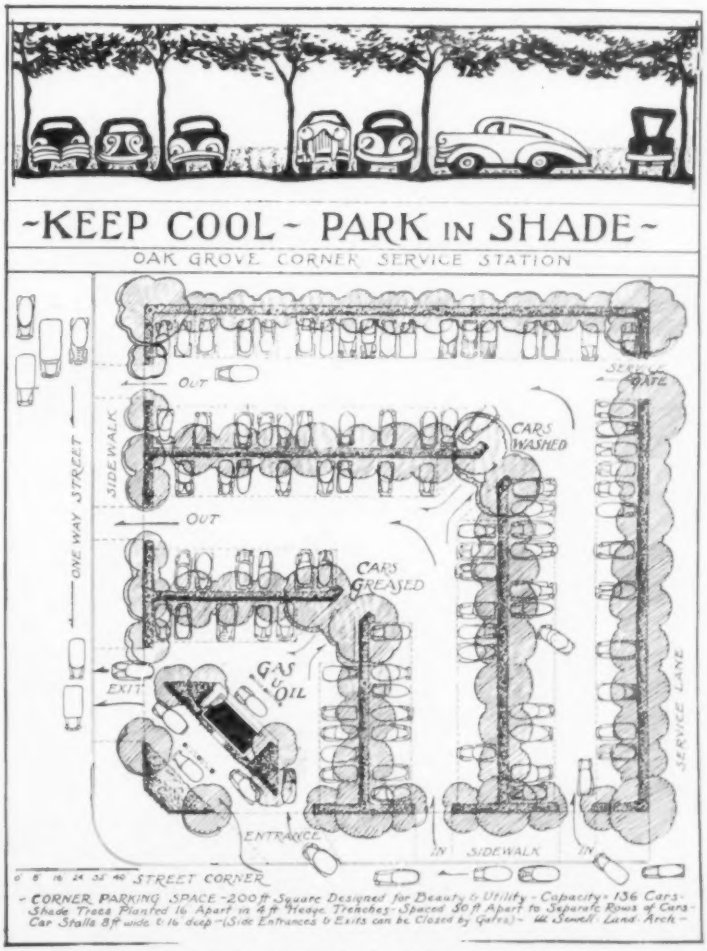
***June 24-26—Baltimore, Md.**
EASTERN ASSOCIATION OF FIRE CHIEFS. Annual Convention. (Lord Baltimore Hotel) Sec., Charles E. Clark, Box 217, Wayne, Pa.

***June 25-29—Indianapolis, Ind.**
NATIONAL EDUCATION ASSOCIATION OF THE UNITED STATES. Annual Convention. Exec. Sec., Willard E. Givens, 1201 16th Street, N. W., Washington, D. C.

***June (Date Later)—Albany, N. Y.**
NEW YORK STATE CONFERENCE OF MAYORS AND OTHER MUNICIPAL OFFICIALS. Annual Meeting. (Hotel Ten Eyck) Exec. Sec., William P. Capes, City Hall, Albany, N. Y.

* First appearance on this page.

PLAN FOR CORNER SERVICE STATION AND TREE-SHADED PARKING SPACE


~KEEP COOL~ PARK IN SHADE~
OAK GROVE CORNER SERVICE STATION
OUT
SERVICE GATE
CARS WASHED
SIDEWALK
ONE WAY STREET
OUT
CARS GREASED
GAS & OIL
EXIT
SERVICE LANE
ENTRANCE
IN
SIDEWALK
IN
0 8 16 24 32 40
STREET CORNER
~CORNER PARKING SPACE~200 ft Square Designed for Beauty & Utility~Capacity~136 Cars~Shade Trees Planted 16' Apart in 4 ft Hedge Trenches~Spaced 30 ft Apart to Separate Rows of Cars~Car Stalls 8 ft wide & 16 deep~(Side Entrances & Exits can be Closed by Gates)~ W. Sewell Land. Arch~

Plan by Marjorie Sewell, Landscape Architect, New Hope, Pa.

MONEY TALKS

Make it speak the only language the Axis understands:

THE RUMBLE OF TANKS

THE ZOOMING OF PLANES

THE CRACK OF RIFLES

THE ROAR OF CANNON

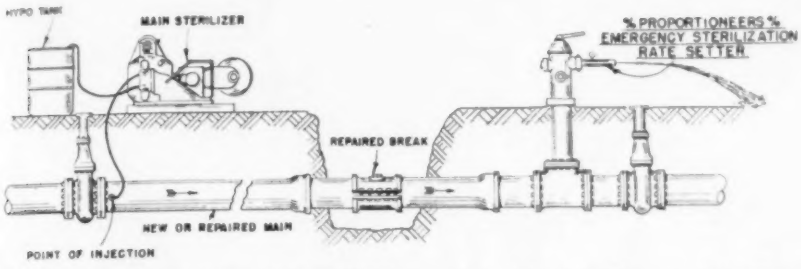
THE BURSTING OF BOMBS

BUY WAR BONDS

INTERNATIONAL BUSINESS MACHINES CORPORATION

News and Illustrations

Items of Interest to City, Town and County Officials, and Others Concerned with the Economical Construction and Efficient Operation of Public Improvement Undertakings



Simplification of emergency main sterilization work is claimed by this new rate setter. It is designed to give the operator accurate information on the rate of flow through the pipe to be treated. Knowing this and the rate of chemical feeding, he will have more accurate control of the sterilization in the main.

Simplifying Main Sterilization

A new flow-rate-setter has just been produced by Proportioneers, Inc., 99 Codding St., Providence, R. I., that the manufacturer asserts will eliminate guesswork in main sterilization.

The generally recommended practice has been to establish a known rate of flow through the main to be treated and to adjust the rate of chemical feed accordingly. The flow through the main may be established by opening a hydrant or blow-off.

Various methods of main sterilization under emergency conditions are known. However, practically all of them require a flow at a known rate through the main to be treated with the rate of chemical feed adjusted accordingly. The flow through the main may be established by opening a hydrant or blow-off.

The new equipment is designed to establish this rate of flow quickly and easily. It consists of a tube with a National Standard hydrant coupling at one end, a replaceable fixed orifice at the other, and a direct reading gage for indicating the flow rate in gallons per minute.

Procedure

The manufacturer points out that by using this type of equipment main sterilization can be conducted quickly and easily by any work crew. The following sterilization procedure is recommended:

Select a convenient rate of flow for treatment such as 50 gpm.

Adjust sterilizer for desired delivery of chemicals.

Flush the main thoroughly.

Couple Emergency Sterilization Rate-Setter to a hydrant at the downstream end of the main to be treated.

Open the hydrant until the gage registers the desired flow.

Connect the sterilizer to the main and put it into operation.

When desired residual has been established in the Rate-Setter effluent, shut off the hydrant and sterilizer.

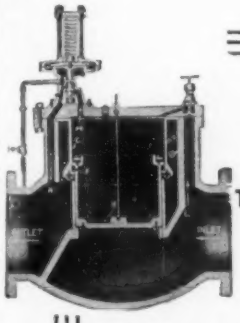
Allow the main to stand under pressure for the desired contact time (contact time varies depending on residual—30 minutes with 250 ppm or 24 hours with 50 ppm) and then flush to remove excess chlorine.

The manufacturer points out that the Emergency Sterilization Rate-Setter converts main sterilization from a complicated process to a simple procedure easily and efficiently followed by any work crew. It is simple, inexpensive, compact, of rugged construction, and easy to install and operate.

U. S. Water Supply Shows Improvement

On Dec. 1, 1942, water storage for power, municipal, and industrial use had increased in the United States and Canada by 180 per cent over the amount in existence one year ago. This is according to the Dec. 11 release issued by the Geological Survey of the U. S. Department of the Interior. In the United States, cities experienced normal flows everywhere except in northern Maine, Florida, northern Mississippi, and in an area stretching from southern Montana through Arizona and western New Mexico.

Although water supply conditions remained unfavorable in Florida, groundwater conditions in eastern seaboard states showed some improvement. Large November runoffs were reported in the East-North-Central states, and in the West conditions generally were favorable. Floods occurred in parts of Oregon. Ground-water conditions in California, Oregon, and Washington, as shown by key observation wells, differed considerably from place to place at the end of November but in general were favorable.



SINGLE ACTING SEMI-THROTTLING ALTITUDE VALVE

★

Installed in upstream line to tanks, standpipes or reservoirs, this valve sensitively maintains any desired water level to prevent overflow.

The valve is semi-throttling by gradually closing as water approaches the maximum water level to be controlled. The valve is self-contained without any waste of water from above the valve piston, and is especially desirable for service where a low head is to be maintained against a higher influent pressure.

Write for Specifications

GOLDEN-ANDERSON VALVE SPECIALTY CO.

Fulton Building Pittsburgh, Pa.

Jeffrey

FOR A COMPLETE LINE OF SEWAGE AND WATER TREATMENT EQUIPMENT.

Bar screens (mechanically cleaned)
Chemical feeders (electric vibrating)
Flocktrols (controlled flocculation)
Grit washers
Grit collectors
Primary and secondary sludge collectors
Sludge elevators
Screenings grinders
Scum removers
(All Patented)

Jeffrey engineers have had years of experience—have made many installations—can offer technical data on both equipment and plant design. Write

The Jeffrey Mfg. Co.

970-99 NORTH FOURTH STREET
COLUMBUS, OHIO

Baltimore
Birmingham
Boston
Buffalo
Chicago
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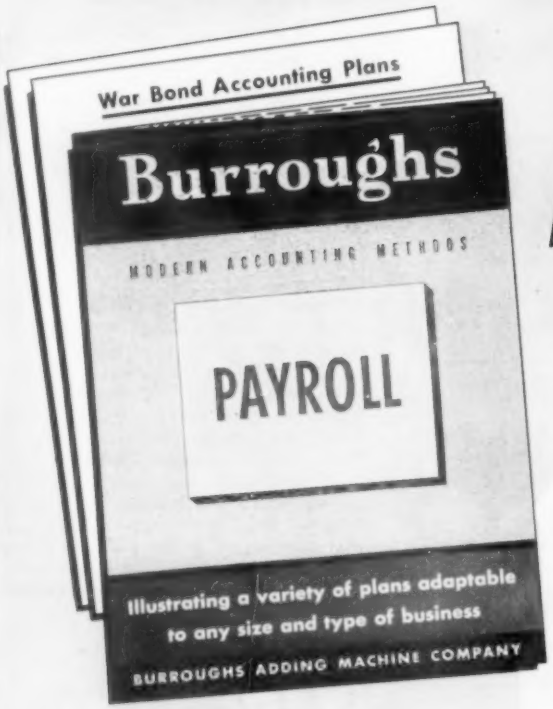
Cleveland
Denver
Detroit
Harlan
Houston
Huntington
Milwaukee
New York
Philadelphia
Pittsburgh
St. Louis
Salt Lake City
Scranton

HELPING MUNICIPALITIES MEET THEIR WARTIME FIGURING AND ACCOUNTING PROBLEMS


War Bond Accounting Plans
Burroughs
MODERN ACCOUNTING METHODS
PAYROLL
Illustrating a variety of plans adaptable to any size and type of business
BURROUGHS ADDING MACHINE COMPANY

PAYROLL ACCOUNTING

INCLUDING WAR BOND DEDUCTION PLANS

Most municipal departments these days are employing more people to handle an increasing volume of work created by wartime conditions. In the majority of cases this sets up new payroll accounting problems. Into this picture also enters the problem of handling War Savings Bond deductions.

Long experience in helping users to handle their payroll accounting with greater speed, less effort, and at less cost has enabled Burroughs to compile much information about payroll applications and procedures. This information, which is kept constantly up to date, is available to any municipality.

Send For This Information

The folder above illustrates and describes eight modern payroll plans most commonly employed in business and industry. Each is easily adaptable to municipal payroll accounting. Other printed payroll accounting information covers the subject of War Savings Bond deductions, and shows several types of records that are proving highly satisfactory. This information is yours for the asking.

BURROUGHS ADDING MACHINE CO.
DETROIT, MICHIGAN

Send me your information on Payroll Accounting ☐.

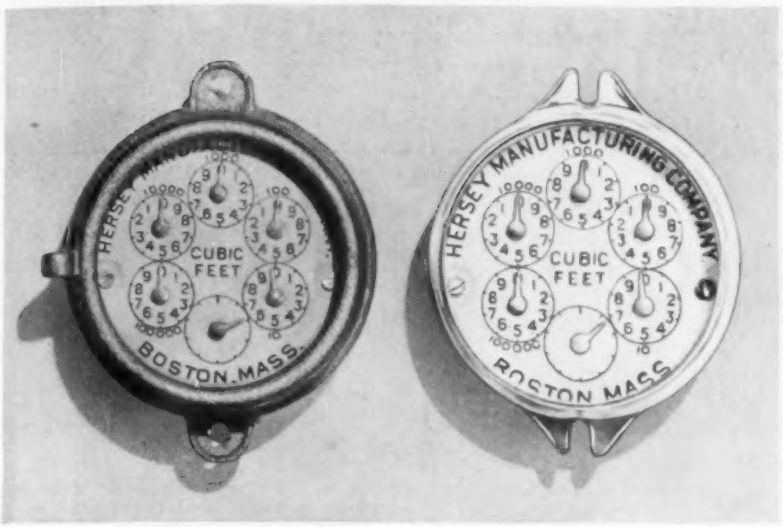
I should also like information on Tax Accounting ☐; Budgetary Accounting ☐.

Name_____

Title_____

Address_____

Burroughs



A view showing the difference between the standard bonnet and the new Magni-Vision bonnet of the meters made by the Hersey Mfg. Co.

Magni-Vision Bonnet on Hersey Meter

Hersey Mfg. Co., South Boston, Mass., picked an old idea out of their files and incorporated it in their new iron case water meters. Back in 1907 Hersey engineers developed the Magni-Vision bonnet, aiming at not only water-tight protection but also clear visibility as an aid to accurate reading. It, together with all-glass construction, constitutes a feature of of the meters being manufactured by this company.

As an added feature, the external top casing is made of high-grade cast iron treated with a coating of black baked enamel which is uniform with the treatment of the anti-frost bottom used on Models HF and F meters. All parts are interchangeable, and the interior parts of these new meters are interchangeable with the interior parts of bronze case meters previously manufactured.

Frank L. Pierce President of Lyle Signs

Frank L. Pierce, president of Lyle Signs, Inc., 2720 University Ave., S.E., Minneapolis, Minnesota, died Thursday, November 19, 1942, after a two months' illness.

Born at Breckenridge, Minnesota, Mr. Pierce has been with Lyle Signs, Inc. since its establishment and has been president since 1935.

Department Consolidation in Lansing, Mich.

Street construction and maintenance will be improved as the result of the recent consolidation of engineering departments at Lansing, Mich. This change combines the old City Engineering Department with the Public Works Department into a new Department of Public Service. Glenn P. Manz is Director and City Engineer. Collins E. Thornton is Assistant City Engineer in charge of construction. Palmer H. Slack is Assistant Director. The change became effective November 3.

Under the old system, the Engineering Department was responsible for all engineering design such as bridges, sewers, sidewalks, and grading, while the Department of Public Works did all street cleaning and constructed gravel streets and concrete sidewalks.

Confusion also existed in regard to the construction of streets, with one department building the base and the other furnishing the oil-aggregate surfacing, according to Mr. Manz. The aggregate for plant-mix surfacing was produced at a pit owned and operated by the Public Works Department, although a shovel was rented from the Engineering Department to feed the gravel plant. The processed gravel was hauled by Public Works trucks to the asphalt plant, owned and operated by the Engineering Department.

New Chain Belt Director

A. R. Abelt was elected director and vice-president of the Chain Belt Co., Milwaukee, Wis., to replace Mr. F. J. Weschler of the Baldwin-Duckworth Division who died last month.

G. D. Gilbert, formerly sales manager of the Baldwin-Duckworth Division, succeeds Mr. Abelt as secretary and sales manager.

Heil Company Opens Two New Branches

A new service branch and also a new branch office have been opened simultaneously by The Heil Co., Milwaukee, Wis.

The service branch has expanded its quarters, joining the facilities of Knorr-Maynard, Inc., at 5743 Woodward Ave., Detroit, Mich. The branch office has been opened in a new location with larger quarters at Suite 725 Fisher Bldg., Detroit, Mich.

CARSON CLAMPS
And Mechanical Joints
STOP LEAKS

Glands and bolts made of corrosion-resistant charcoal (pearlitic) cast iron—last as long as cast iron pipe. Bell clamps and mechanical-joint. Glands accommodate variations in pipe dimensions, insure uniform compression of rubber gasket.

WRITE FOR ILLUSTRATED LITERATURE

Carson-Cadillac Co.
1221 Pinson St. Birmingham, Ala.

IRONCRETE
BOX *and* FORM

IRONCRETE Meter Boxes consist of an iron top with locking lid which we furnish, and a concrete barrel which you cast on it by means of a steel form.

IRONCRETE Boxes are durable, sightly, inexpensive and easy to make. Write for more information.

FORD METER BOX CO.
WABASH, IND.

Keep the Scrap Piles Growing!

City Officials Find Mimeograph Duplicators Valuable Assistants in Salvage Drives

The salvage drive isn't over.

It won't be over until the war has been won—by us.

Lessing J. Rosenwald, Chief of the WPB's Conservation Division, has said:

"Scrap is a very vital part of the raw material supply, and any diminution in its flow is an immediate threat to war production. The program is not a one-week or one-month campaign any more than this is a one-week war. To be effective, salvage must be an all-out continuing process."

Already, a number of communities have enlisted the Mimeograph duplicator to help arouse and maintain the continued interest of the public in collecting the scrap materials our country must have.

Some of them have organized four separate campaigns:

. . . house-to-house drive for scrap collection through the Civilian Defense organization

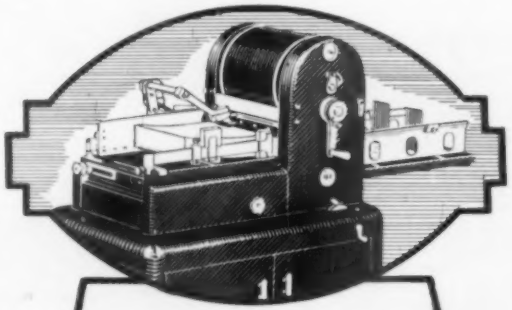
. . . school drive, working with the High School Victory Corps

. . . business and industrial section, a major source of salvage

. . . women's groups and clubs, with particular reference to the waste fats and tin can campaigns.

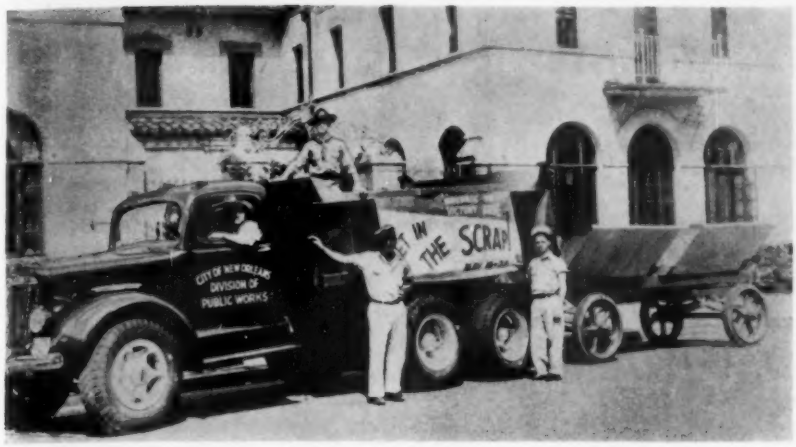
Much of the instructional material, the "reasons why" of the salvage drives, outlines of the duties of workers, and the necessary forms and reports, have been produced on the Mimeograph duplicator. With its speed and economy, accuracy and readability, Mimeograph equipment helps get the paper work out of the way quickly, gives every citizen information he needs and wants, gets the drives moving faster.

Put Mimeograph equipment to work on the salvage drive in your city. For expert assistance on duplicating problems, call the Mimeograph distributor in your community—or write A. B. Dick Company, Chicago.



Mimeograph duplicator

Mimeograph is the trade-mark of A. B. Dick Company, Chicago, registered in the U. S. Patent Office.



This White truck and trailer is part of a fleet of 50 vehicles that New Orleans uses in scrap collection work.

Collecting Municipal Salvage Material

One of the less colorful but highly important jobs in the salvage program is that of collecting the salvage material.

A good example of how extensive the job is, is shown in what has happened in New Orleans. Here the Division of Public Works has a fleet of 50 vehicles plying the streets in quest of scrap, ten at a time. In one particularly intensive drive this city was able to accumulate and ship out 40,000 tons of steel scrap. Boy Scouts mounted on the trucks helped to give an official aspect.

Circulating Water Pumps

Economy Pumps, Inc., Hamilton, Ohio, have developed a new type of single-suction pump which they assert has many new advantages over the conventional type of pump. The chief difference is in the fact that the pump and motor are mounted vertically one over the other instead of side by side. The manufacturer claims economies in construction, installation, and floor space requirements. Lubrication has been simplified and connections have been provided in the pump cover stand for the drainage of packing gland seepage.

Franklin Henshaw Water-Works Manager

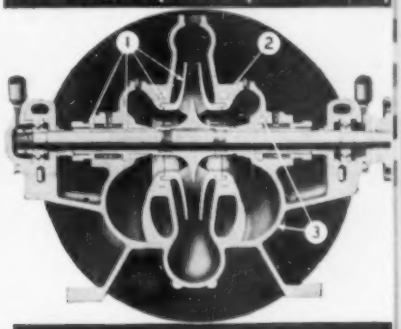
Franklin Henshaw, veteran manager of the water department at Scarsdale, N. Y., died suddenly at his home Sunday, Dec. 6, 1942, at the age of 75.

Mr. Henshaw figured prominently in practically all municipal developments in Scarsdale. He was the first village treasurer, appointed in 1915. He was the first street commissioner, first plumbing inspector, first chief of the fire department, and first manager of the water department, a position in which he remained from 1921 until his retirement in 1940.

Mr. Henshaw was a graduate of the Massachusetts Institute of Technology, a member of the American Water Works Assn., and served as a lieutenant in the Corps of Engineers during the first world war.

A Baker V-type sidewalk plow mounted on an Allis-Chalmers wheeled tractor in use following a snowstorm at Burlington, Vt.

Where *all* depends upon the Pump



Make it DE LAVAL!

1 All parts of De Laval pumps subject to wear are renewable, including impeller, wearing rings, shaft sleeves and glands.

2 The labyrinth wearing rings, which protect impeller and casing against wear, last much longer than do plain rings, and insure and sustain high efficiency while permitting ample running clearance.

3 The horizontally split casing renders all parts easily accessible.

4 All parts are manufactured to limit gages on an interchangeable system, so that parts ordered by number can be installed by ordinary workmen.

Write for Publication P. 2537

De Laval Steam Turbine Co.
TRENTON, NEW JERSEY

INSTALLATIONS WORLD WIDE — LARGEST CITY TO SMALLEST VILLAGE

VALVES COMPLETE EQUIPMENT FOR WATER WORKS FILTRATION AND SEWAGE DISPOSAL PLANTS
LATEST "COREY TYPE" HYDRANTS

Write for Catalogue and Information

IOWA VALVE CO.

General Offices:
Hubbell Bldg., Des Moines, Iowa

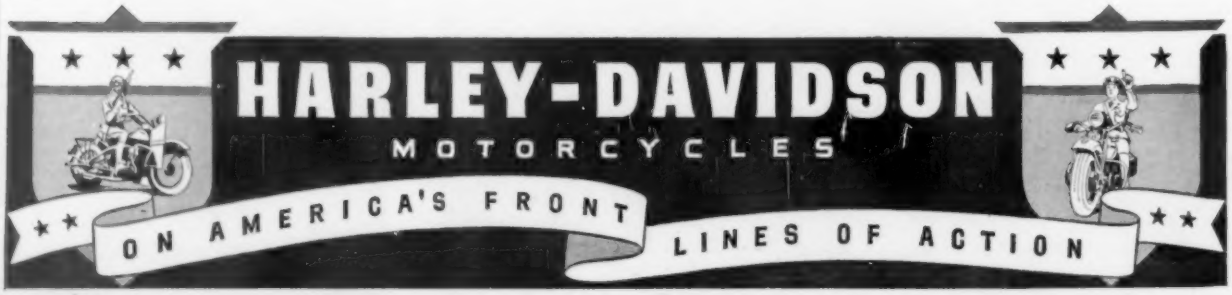
Plant:
Oskaloosa, Iowa

SPEAKING OF LONG, DEPENDABLE SERVICE

MECKLENBURG COUNTY POLICE, CHARLOTTE NORTH CAROLINA have used Harley-Davidsons *Exclusively* since 1922!

THIS is a saga of motorcycles and men. Their record of long, dependable performance tells more than a thousand words could do. Rugged, powerful Harley-Davidson Police Motorcycles used exclusively for 20 years. And these police officers, from left to right—Ford Holton and Lacy Fesperman, 17 years service each — Chas. Alexander, 10 years — Ed Reams and Joe Hamilton, 7 years each—and Jake Culp, 10 years. Chief Stanhope Lineberry and Harley-Davidson dealer, Doug Creech, at the right, can well be proud of this outstanding record of superior performance — as are more than 3600 cities, towns and states who have purchased Harley-Davidson Police Motorcycles.

HARLEY-DAVIDSON MOTOR CO., Milwaukee, Wisconsin



Mack Mfg. Gets Army-Navy "E"

On November 21, 1942, the Allentown plant of the Mack Mfg. Co., Long Island City, N. Y., was awarded the Army-Navy "E" for outstanding work in the production of war equipment. The Mack Mfg. Co. was notified of the award on October 10 by Robert P. Patterson, Under Secretary of War, who congratulated this company on its outstanding contribution to victory. Mack plants at Plainfield, N. J., and New Brunswick, N. J., already had received the award, and now all Mack plants can fly this "E" flag.

The presentation was made by Col. D. N. Houseman, District Chief of the Philadelphia Ordnance District, at the Allentown, Pa., plant and was accepted by C. J. Moran, Factory Manager for the company.

D. C. Guest Retires as Graybar Sales Mgr.

D. C. Guest, sales manager for the Outside Construction Department of Graybar Electric Co., 420 Lexington Ave., New York, retired effective Dec. 31, 1942. Mr. Guest started in 1906 with the Western Electric Co. at Chicago as city salesman and subsequently was street railway specialist, line material specialist, street lighting sales manager, and in 1935 was appointed to his present position. Mr. Guest is also head of the Rural Lines Department.

L. W. Taylor took over the duties as sales manager on January 1, 1943. He has been assistant sales manager of the Outside Construction Department since 1937 in charge of Rural Line activities.

Jeff Corydon Resigns

Effective December 11, 1942, Jeff Corydon resigned as president and director of Proportioneers, Inc., 99 Codding St., Providence, R. I.

Mr. Corydon states that he is severing all active connections with the company. According to his present plans he may be reached at his residence, 51 Paine Ave., Cranston, R. I., until further notice.

A Correction on $CaCl_2$ Use

On page 109 of the December issue of THE AMERICAN CITY, an error appeared in regard to the use of calcium chloride for freeze-proofing water for emergency fire protection. The table recorded two pounds of flake calcium chloride required per gallon of solution to provide protection against —10° F This concentration only provides protection against temperatures of +10°F. The correct tabulation is as follows:

Lbs. of flake $CaCl_2$ per gal. of solution	Freezing Point
2.0 (2.20 lbs. per gal. water)	+10°F.
2.5 (2.85 lbs. per gal. water)	0°F.
3.0 (3.50 lbs. per gal. water)	—10°F.
3.5 (4.20 lbs. per gal. water)	—26°F.
4.0 (4.94 lbs. per gal. water)	—50°F.

WHY—

The above illustration shows the position of the rubber lining in

Bi-Lateral Fire Hose

when it is held in a flattened position between calls into service. This is why we can save a city one replacement, because the hose will give double the service of any hose constructed under the old method.

—Also—

We can load 25% more on the apparatus-bed, actually making an $8,000 truck loaded with the Bi-Lateral construction, cheaper than one priced at $7,000 when loaded with other construction.

BI-LATERAL FIRE HOSE CO.

20 N. Wacker Drive, Chicago, Illinois

PITTSBURGH•DES MOINES

Incineration Plants

End disposal problems for communities large or small—economically, without smoke or odor nuisance—designed, fabricated and erected by the leading organization in the field. Check the advantages of P-DM *High Temperature* incineration—write for Bulletin No. 601!

PITTSBURGH • DES MOINES STEEL COMPANY

Pittsburgh, Pa. . . . 3412 Neville Island
Des Moines, Ia. . . . . 913 Tuttle Street

Remember—

VALVES HYDRANTS

Need Regular INSPECTION

Because of rapidly changing personnel on account of employees going to the Army and Navy, valves and hydrants may now be sometimes in the hands of persons not very familiar with their proper care. We offer the following suggestions:

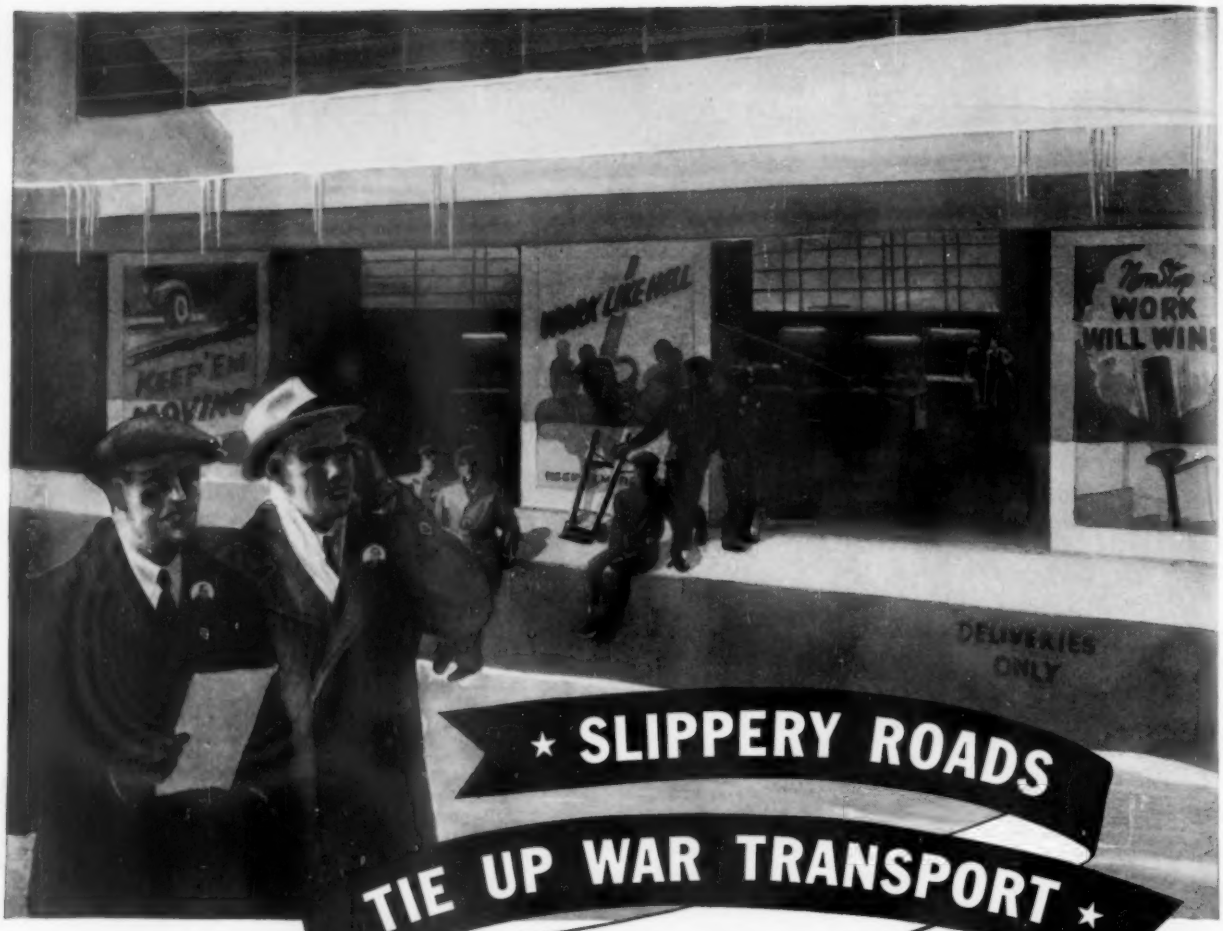
GATE VALVES

All Gate Valves in water lines should be inspected at least twice per year, more often if possible. Most of these valves stay continuously in open position. Unless inspected, a valve might remain open for a number of years. Then in case of emergency, the valve might be found inoperative. An inspection should consist of opening and closing the valves several times to see that it is in perfect working order, and gland bolts should be tightened if there is any indication of leakage after inspection.

FIRE HYDRANTS

The above suggestions also apply to Fire Hydrants. In addition, Fire Hydrants should be flushed out at least twice per year to remove foreign matter that might collect making the hydrant difficult to operate or clogging nozzle of fire hose.

M & H VALVE AND FITTINGS COMPANY
ANNISTON, ALABAMA



★ SLIPPERY ROADS
TIE UP WAR TRANSPORT ★

Never has the need for skidproofing icy roads been so great as now. Transportation tie-ups due to icy roads are inexcusable this year when delayed production may cost lives. This year, ice control methods must be better—must get into action quicker—must last longer. To achieve these important effects, merely treat your ice control grits with calcium chloride. They will act quicker, dig deeper and stay longer. Bulletin 27 tells how to skidproof icy roads and streets. Write for it today.

CALCIUM CHLORIDE ASSOCIATION, 4145 Penobscot Building, Detroit, Mich.

CALCIUM CHLORIDE

FAST • POSITIVE • ECONOMICAL

MAKES ICY ROADS SAFER
●
SAVES UP TO $6.00 A MILE EACH TREATMENT

When you write for that catalog, kindly mention THE AMERICAN CITY.

Thornton four rear-wheel drive makes this Ford 1½-ton truck, equipped with Anthony dump and hoist type body, able to perform the heavy duty work required on the famous Alaskan highway. The body on this unit has a capacity of six yards and is 10½ feet. long.

Thornton Drives for Alaskan Highway Trucks

Thornton drives have been specified for use on more than 500 trucks used in the construction of the famous Alaskan Highway connecting the United States with Alaska. These units, manufactured by Thornton Tandem Co., Detroit, Mich., are applied to Ford trucks and then are equipped with 6-yd. dump bodies made by the Anthony Co., Streator, Ill. Thornton four rear-wheel drive utilizes two driving axles under the load and provides a heavy-duty performance for on- or off-road operations.

The new Alaskan Highway, sometimes termed the "America's Burma Road," totals 1,600 miles in length. Nearly 1,200 miles of new road have been cut through the forests to Fort Nelson, White Horse, in the Yukon territory.

New Bulletin Board

A new, modern display cabinet for bulletins, known as the M.S.A. Toll-Board, has been announced by Mine Safety Appliances Co., Pittsburgh, Pa. The unit is designed for better display of wartime safety and morale posters, instructions, and special messages. Sturdily constructed of non-critical materials, the Toll-Board's glass-front cabinet permits quick change of bulletin material through a novel but thoroughly practical design.

The M. S. A. Toll-Board is illuminated and equipped with simple, trouble-proof hardware designed to give years of efficient service. Change of bulletin material is easy with the Toll-Board, the manufacturer points out. A pivot joint at the top permits the cover to swing up and away from the back where it is retained in an open position by a hold-out latch so that the fibre posting board can be removed or replaced easily.

Tightly fitting seams make the Toll-Board's use in exposed locations practical. Attractively finished in two-tone green enamel, the unit measures 32 x 25 x 3½ inches, and is equipped with a glass sign with sandblasted letters reading "Safety Bulletins" or "General Bulletins."

The new Mine Safety Appliance bulletin board.

HYDRO-TITE

A DEPENDABLE JOINTING COMPOUND FOR BELL & SPIGOT WATER MAINS

HYDRO-TITE is a self-caulking sulphur base jointing compound used to joint Bell & Spigot cast iron water mains and soil pipe. It is made in powder form which insures uniformity and quick melting.

For more than 30 years Hydro-Tite has been used by Water Companies and Water Departments everywhere. Hundreds of tons of Hydro-Tite are now being used on strictly war projects under War Department and Navy specifications.

HYDRAULIC DEVELOPMENT CORP.

Main Sales Office:
50 Church Street, New York, N. Y.

General Office & Works:
West Medford Station, Boston, Mass.

ARMY TWILL by REEVES SANFORIZED* MADE TO GOVERNMENT SPECIFICATIONS
REG. U.S. PAT. OFF.

REEVES Glengarrie POPLIN

For Better Uniforms Demand These Labels!

REEVES ARMY TWILL SCORES A HIT!

Men who safeguard our City require uniforms whose official appearance inspires public confidence. They must also withstand the strain of active duty. That's why Reeves Army Twill wins their praise. Specify this famous fabric in *your* uniforms.

Reeves Army Twill passes U. S. Govt. tests for strength, endurance and color-fastness. For fabric vitality it's a leader!

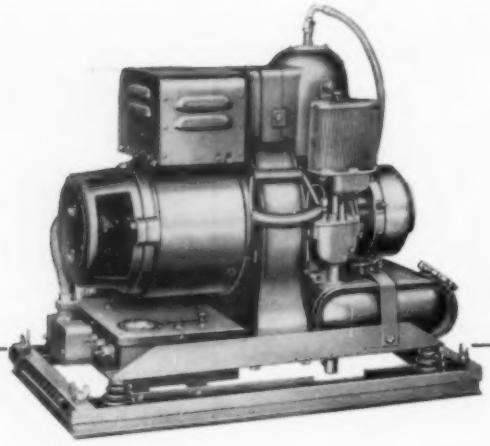
For matching shirts, GLENGARRIE POPLIN is equally popular. Both fabrics available in favorite colors—are Sanforized* against shrinking.

*Fabric shrinkage not more than 1%. (U. S. Government Test CCC-T-191-a).

See your nearest dealer for uniforms, sport and work clothes made from these famous fabrics, or write for leaflet to:

OVER 60 50 million yards of Reeves Army Twill sold to the U.S. Army

REEVES BROTHERS, INC.
54 WORTH STREET NEW YORK CITY



The BIGGEST Job We Ever Had

Come hurricanes, floods, windstorms, and many other emergencies, and in poured the orders for Homelite Portable Pumps and Generators *RUSH*. That gave us the feel of producing under pressure. It prepared us for our present job — the biggest, most urgent job we ever had — producing Homelites for many branches of the armed services.

We've gone all out in war production. We can't possibly deliver a unit to anyone outside of the Army or Navy. So you'd better take extra care of the Homelites you now have. Keep them going for the duration.

★ ★ ★

The Army-Navy "E" pennant flies daily over the Homelite plant. Won through long and hard hours of production, this flag serves as an inspiration for all Homelite workers to make the best possible units in ever-increasing numbers

HOMELITE CORPORATION

PORT CHESTER, NEW YORK

Hydraulic Dredges for Land Improvements

The large hydraulic dredge manufactured for many years by Morris Machine Works, Baldwinsville, N. Y., and used on heavy construction river work is finding occasional application also in the municipal field. It has been used to change swamps into parks, to deepen and enlarge lakes and reservoirs, and to drain swampy areas eliminating them as a breeding ground for mosquitos.

In the new 24-page catalog issued by this company, municipal owners of these dredges are listed. Illustrations also show their use in transforming wasteland into parks for recreational areas. Details are included on the operation of the dredge. The company states that its engineering service department is available to offer recommendations based on its many years of service.

Cutting High-Voltage Wires

A new wire cutter developed by American - LaFrance - Foamite Corp., Elmira, N. Y., makes it possible to cut hot electric wires at a safe distance from the danger zone. The Longrange Cutter represents a departure from the conventional double-handled wire cutter that forces the operator into close proximity and subsequent danger after the wires have been cut.

Slotted jaws hold the wire by gravity. Jaw openings are wide enough to handle a 1½-in. insulated cable and will cut up to No. 4 hard drawn copper cable.

The cutting jaws are of high-grade alloy steel. If the jaw is burned after cutting a live conductor, the blade may be replaced readily.

This long-range cutter makes it possible to sever high-tension wires at a safe distance.

Sweeper at Chicago, Ill., airport.

A Small Power Sweeper

City officials are showing increasing interest in a type of sweeper that has been popular for a long time in industrial work. Roto-Sweeper, made by the Ideal Power Lawn Mower Co., Lansing, Mich., is designed to do the work formerly required in hand-sweeping. One man operating one of these power sweepers can clean 35,000 to 50,000 sq. ft. an hour. The equipment is compact and can be maneuvered into places ordinarily reached only by hand-brooms. It is self-propelled, the operator merely guiding the machine and keeping the brush adjusted with the proper contact for the surface to be cleaned.

In municipal work the equipment finds particular use in cleaning sidewalks, parking areas, airports, and portions of streets where the larger automatic equipment cannot be used.

Accessories also are available so that the equipment can be used in snow-removal work.

Kienle Retires from Mathieson Alkali

John A. Kienle, vice-president-director of sales for The Mathieson Alkali Works, Inc., 60 E. 42nd St., New York, resigned from this post effective November 18, 1942.

Mr. Kienle joined this company as manager of sales in 1920 and was elected vice-president and director of sales in 1922. He has been known for many years by his active work as secretary of the Water and Sewage Works Manufacturers Assn. Earlier this year he resigned this position after 25 years of service.

Mr. Esse E. Routh, who has been general manager of sales since 1928, beginning work with the company in 1920 as Southern sales manager, has been elected vice-president and director of sales. Robert J. Quinn becomes assistant to the vice-president-director of sales. D. W. Drummond has been appointed general manager of sales.

INVITING INVENTORS—

Men With New Equipment Ideas—
Plants Needing Extended Facilities—

To Work With Us Now On Plans
For Greater Business After the War

We are a 30-year-old Sheet Metal Fabricating Plant—one of the leading manufacturers of such items as Gasoline Truck Tanks, Gasoline Trailer Transport Tanks, Asphalt Heating & Spraying Equipment for making black top roads, Distributors, Tar Kettles, Street Flushers, Small Maintenance Rollers, etc.

We have for many years built a wide variety of products of aluminum, stainless steel, Hi-Tensile steel, blue annealed steel. We have a large engineering force and a sizable department devoted solely to research. Our plant is modern, well equipped, and manned by skilled workers who have been with us for many years. Our experience, skill and facilities are at the present time devoted 97% to war production work on vital equipment for U. S. Army Air Forces, Marine Corps, U. S. Engineers, and other war agencies. To deliver the volume of the materials required of us we have recently expanded our facilities, both in buildings and equipment. Consequently, we will be in a position to considerably expand our present lines of manufacture after the war. In preparation for this we are working on ideas for getting into entirely new industries and new markets. ***YOU*** may have ideas for new equipment. If you have such ideas our Research Department will gladly discuss them with you and help you develop them if they prove practical. ***YOU*** may be operating a plant making a product which could be built more economically in our plants and sold in greater volume.

Final arrangements may result in your coming into our company—or a proposition might be worked out on a royalty or some other desirable basis. If you feel you have something on which we could work together, please communicate with us, giving us full particulars. We can then arrange for a meeting if the ideas are adaptable to our plant and facilities, or adaptable to facilities which we might wish to add to carry out this idea.

STANDARD STEEL WORKS North Kansas City Missouri, U. S. A.

89 years
of progressive storage tank engineering!
Established in 1854, the R. D. Cole Mfg. Co. has long been recognized as one of the nation's outstanding tank builders. With 89 years of "progressive storage tank experience" at your disposal, we shall welcome the opportunity to serve your tank needs.

All shapes and sizes

We have developed a complete line of elevated steel tanks for water supply, both for domestic service, and sprinkler requirements, ranging in capacity from 5,000 to 2,000,000 gallons. The designs include the standard Hemi-spherical and Self-supporting bottom, the "Cole Oval-oid," Standpipe, and many individual styles.

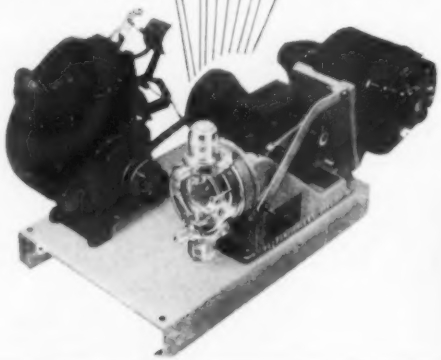
Storage Tanks

We also make pressure tanks for storage of gas from digestors at sewage disposal plants so that excess output at peak loads can be used during off-peak periods. Also chemical storage tanks, hot water storage tanks, tanks for bulk storage of oils and gas.

Write for "Tank Talk"—No. 15A

R.D.COLE MFG.CO.
Established in 1854
NEWNAN···GEORGIA

GLOBAL WATER PROTECTION FOR THE MEN OF OUR ARMED FORCES...



...STILL SOME LEFT FOR EMERGENCY STERILIZATION

One of the interesting stories to be told after the war is that of the efforts made to protect the health of our armed forces as they fought all around the globe. % Proportioneers % is proud that their equipment is doing its share in safeguarding drinking water supplies at bases, forts, camps, and with forces on the march.

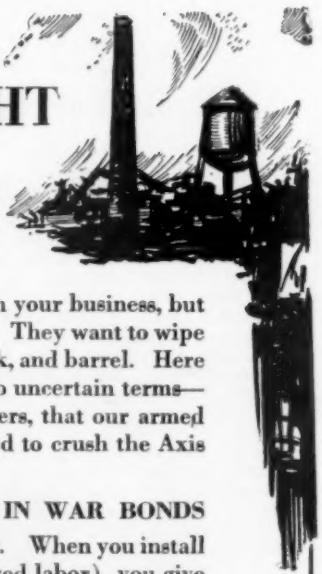
We are happy, too, that some of our facilities are available for emergency duty on the home front. The Dual Drive Chlor-O-Feeder illustrated is playing a leading part in this emergency program; actively supported by meter operated main sterilizers, all hydraulic feeders, and the Blitz-Buggy trailer unit.

It will pay you to bring your particular problem to **"Emergency Chemical Feeder Headquarters"** *—or just ask us to send you new Bulletin EMM. Address—*

% PROPORTIONEERS, INC. %
Chemical Feeder Headquarters
99 CODDING STREET · PROVIDENCE, R. I.

TARGET FOR TONIGHT

. . . Your Business?



Maybe they won't actually come and drop a *bomb* on your business, but the Axis war lords have their eye on it, just the same. They want to wipe it out as a competitive force—or take it over lock, stock, and barrel. Here is a threat that you can reply to *now*, today, and in no uncertain terms—by buying War Bonds to the very limit of your powers, that our armed forces may have the guns, tanks, and planes they need to crush the Axis *once and for all.*

THE GOAL: 10% OF EVERYONE'S INCOME IN WAR BONDS

Every American wants the chance to help win this war. When you install the Pay-Roll War Savings Plan (approved by organized labor), you give your employees that chance. For details of the plan, which provides for the systematic purchase of War Bonds by voluntary pay-roll allotments, write: Treasury Department, Section S, 709 12th St. NW., Washington, D. C.

EVERYBODY EVERY PAYDAY 10%

Buy War Savings Bonds

This space is a contribution to America's All-Out War Program by

THE AMERICAN CITY

Water-Works Census

Based on figures from 29 states, on which both population and gallonage of water consumption are available, an average daily per capita output of 119 gallons per day was recorded as one of the items in a recent census conducted by the United States Public Health Service and published in Public Health Reports Vol. 55, No. 45, issued November 6, 1942.

Out of a total of 5,372 water-treatment plants, 69 per cent are municipally owned and 31 per cent are owned privately.

On a flow basis, in 30 states for which output figures are available, about 94 per cent of the water treated is chlorinated. In regard to softening, the lime or lime soda process is used in 69 per cent of the plants and the zeolite treatment in 31 per cent. However, on a total flow basis in 20 states for which output figures are available the lime or lime soda softening process is used in 94 per cent of the water softened.

The summary was prepared by S. R. Weibel, Passed Assistant Sanitary Engineer (R), United States Public Health Service.

New President for Neptune Meters, Ltd.

W. T. Randall has been named president of Neptune Meters, Ltd., Toronto, Ont., as the result of an election at the recent board of directors meeting, according to an announcement made by the Neptune Meter Co., 50 W. 50th St., New York.

New Oil Switch Protects High-Voltage Lighting

In part of a general plan to match oil switches with the high insulation levels of the transformers, the General Electric Co., Schenectady, N. Y., has developed a new Novalux controller which insures increased protection against electrical breakdowns on high-voltage circuits. This solenoid-operated oil switch is for use with constant current transformers energized from distribution systems up to 7,620 volts. Larger bushings and more internal insulation are used in order to allow these controllers to reach the 15 kv insulation level.

Other parts remain the same as those used in all Novalux controllers.

New Novalux Controller protects against breakdowns in high voltage circuits.

O.K. CHAMPION SEWER CLEANER

Sewage disposal plants to function well and economically, need clean sewer lines. Old sewer or new yield readily to thorough cleaning when you use OK Champions.

Catch Basins need periodic removal of the thousand and one things that go down into these curb receptacles. Quickly and easily cleaned with OK Champions.

Highway culverts are duck soup for the OK Champion. The bucket takes it out and puts it where you want it in one operation.

For all size sewers, 6" to 6'. Exclusive patented safety devices and features that absolutely prevent injury to sewer mains or systems.

Complete line of sewer rods and accessories. Write

CHAMPION CORP.
4716 SHEFFIELD AVE., HAMMOND, IND.

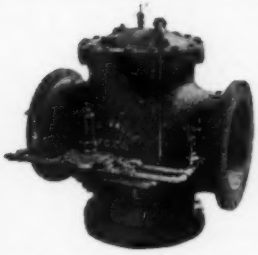
Once . . . . an economy and a convenience
Now . . . . a wartime necessity

Ross Automatic Valves

Surge Relief Valves—

Protect **distribution systems against excessive pressures.**

Prevent **over-drafting of a deep well by supplying constant back-pressure.**



Altitude Valves—
Single or double-acting

Prevent **overflow of tanks, standpipe or reservoirs.**

Retain **supply on off-peak loads. Make storage available for peak load periods.**

Control **head during filtering operations.**

Reducing Valves—

Regulate **pressures in either gravity or direct pressure systems.**

Regulate **fire-flows between zones of unequal pressure.**

Regulate **pressure in filter waste lines.**

No distribution system is better than the valves that control it.

Write for literature, catalogs, and details to fit your particular system.

ROSS VALVE MFG. CO., Inc.
P. O. BOX 596 TROY, N. Y.

EVERYBODY EVERY PAYDAY 10%

IN WAR BONDS

★ ★ ★ ★ ★ ★ ★ ★

New Goal for Payroll Savings Plan!

Along with increased war production goals go increased costs . . . extra billions which must be raised, and raised fast, to win this war. That means we must raise our sights all along the line, with every firm offering every American with a regular income the chance to buy more *War Bonds*. YOUR help is asked in encouraging employees to put at least 10 per cent of their pay into War Bonds every payday, through the Payroll Savings Plan. For details of the Plan, approved by organized labor, write, wire, or phone Treasury Department Section T, 709 12th Street N.W., Washington, D. C.

U. S. War Savings Bonds

The American City Professional Service Directory

ALBRIGHT & FRIEL, INC.
Consulting Engineers
Water, Sewerage, Garbage and Valuation Problems
1520 Locust St.
Philadelphia, Penna.

CHANGED YOUR ADDRESS?
If so, please notify the publishers as we are anxious to have your card in this Directory, correct. Thank you.

BURGESS & NIPLE
Philip Burgess — Chester A. Niple
T. C. Kusumaul — Earl S. Hoyt
Ben K. Bare — Clayton C. Bull
Waterworks, Purification, Sewerage, Sewage Treatment, Valuations
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Inspections and Tests of Materials, Reports, Appraisals, Designs, Specifications.

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